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ENUMERATION OF THE LIGNEOUS PLANTS OF NORTHERN CHINA.

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GINKGOACEAE TO RANUNCULACEAE

DURING the last ten or fifteen years several important collections of plants from northern China have been received at the Arnold Arboretum, the most extensive being those made by W. Purdom, F. N. Meyer, J. Hers and R. N. Cowdry. In the course of the determination of these collections which have greatly extended our knowledge of that flora it has appeared desirable to make a complete survey of the known ligneous plants of the region.

Northern China as here understood includes the six northern provinces Chili, Shantung, Honan, Shansi, Shensi and Kansu; it borders north on Manchuria and Mongolia and south on the Chinese provinces Kiangsu, Anwhei, Hupeh and Szechuan and extends from the Yellow Sea to the high table land of Tibet. The whole area is situated between 100° and 123° E. Long. and 32° and 42° N. Lat. and is traversed by a mountain range running from east to west with a bend to south or southwest in Shansi, reaching in the Tsing ling shan an altitude of about 3350 m. and connecting in Kansu with the high mountains of the Tibetan border; it is drained chiefly by the system of the Hwang ho or Yellow River. An account of the phytogeography of the region, the relation of its flora to that of the neighboring regions, the history of its botanical exploration and other important facts on the botany of the region will be given at the conclusion of the systematic enumeration which is based chiefly on the collections at the Arnold Arboretum and includes references to the literature previously published on the ligneous plants of the region. Under each species and variety there are given, besides the original place of publication of the names, only such citations as contain references to the occurrence of the plant under consideration in northern China. No attempt is made to cite all the synonyms, but in most cases a reference is given to a place where a complete enumeration of synonyms can be found.

GINKGOACEAE

Ginkgo biloba Linnaeus, Mant. Alt. 313 (1771).—Debeaux in Act. Soc. Linn. Bordeaux, XXXIII. 66 (Fl. Tien-tsin, 43) (1879).—Faber in Denkschr.

Entwickel. Kiautschou, 27 (1898).—Masters in Jour. Linn. Soc. XXVI. 546 (1902).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 15 (1904).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XIII. 25, no. 19390 (1908).—Rehder & Wilson in Sargent, Pl. Wilson. II. 1 (1914).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 83 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 111 (1922); Liste Ess. Lign. Honan, 14 (1922).

Salisburia adiantifolia Smith in Trans. Linn. Soc. III. 330 (1797).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. III. 136 (Enum. Pl. Chin. Bor. 62) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).

CHILI: Temple court yard near Peking, *F. N. Meyer*, no. 226, October, 1905 (Herb. U. S. Dept. Agric.).—See also Bunge, l. c., Maximowicz, l. c., Debeaux, l. c., and Masters, l. c.).

SHANTUNG: near Tsingtau (ex Gilg, l. c.).—See also Faber, l. c., Meyer, l. c. and Loesener, l. c.

HONAN: cultivated (ex Hers, l. c.).

This tree is much planted in northern and eastern China, particularly in temple grounds. The only locality where it is supposed to grow spontaneously is near Chang hua hsien in Chekiang, as stated by F. N. Meyer in a letter to C. S. Sargent (see Arnold Arb. Bull. Pop. Inform. n. ser. II. 52 [1916]).

TAXACEAE

Cephalotaxus drupacea Sieb. & Zucc. var. **sinensis** Rehder & Wilson in Sargent, Pl. Wilson. ii. 3 (1914).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLII. 52, nos. 40017, 40018 (1918).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 7 (1922).

Cephalotaxus Fortunei Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 102 (Pl. David. I. 292) (1884).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 186 (1897); in Bull. Soc. Bot. Ital. 1901, 358.—Pritzel in Bot. Jahrb. XXIX. 213 (1900).—Rehder & Wilson in Sargent, Pl. Wilson, II. 5 (1914), quoad specimen e Shensi.—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 303 (1922).—Non Hooker.

Cephalotaxus pedunculata Franchet, in Nouv. Arch. Mus. Paris, sér. 2, VII. 102 (Pl. David. I. 292) (1884).—Pritzel in Bot. Jahrb. XXIX. 214 (1900).—Beissner in Bull. Soc. Bot. Ital. 1901, 358.—Non Siebold & Zuccarini.

Cephalotaxus Griffithii Beissner in Bull. Soc. Bot. Ital. 1901, 358; non Hooker f.

HONAN: Sung hsien, San kuan miao, *J. Hers*, no. 550, May 24, 1919.—See also Hers, l. c.

SHENSI: "Huo kiao zaez" *G. Giraldi*, July 16, 1897; Tai pei shan, *W. Purdom*, 1910; Kwan yin tang, alt. 1300 m., *F. N. Meyer*, no. 1669, September 15, 1914; Nan to chu, south of Sian fu, *F. N. Meyer*, no. 1687, January 31, 1914 (Herb. U. S. Dept. Agric.); Lung chow, Li kia po, alt. 1400 m., *J. Hers*, no. 2378, July 4, 1922.—See also Franchet, l. c., Beissner, l. c., Pritzel, l. c., Rehder & Wilson, l. c., Limpricht, l. c. and Meyer, l. c.

DISTRIBUTION: also Hupeh, Szechuan.

The specimens from Shensi referred by Beissner, Pritzel and others to *C. Fortunei* Hook. seem to represent only a form of *C. drupacea* var.

sinensis with somewhat longer leaves. The true *C. Fortunei* Hook. is a more southern species and apparently does not extend farther north than the Yangtze valley region.

Taxus chinensis Rehder in Jour. Arnold Arb. I. 51 (1919).

Taxus baccata Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 103 (Pl. David. I. 293) (1884).—Pritzel in Bot. Jahrb. XXIX. 214 (1900).—Non Linnaeus.

Taxus cuspidata var. *chinensis* Rehder & Wilson in Sargent, Pl. Wilson. II. 8 (1914).

SHENSI: Tai pei shan, *W. Purdom*, 1910.—See also Franchet, l. c., Pritzel, l. c., Rehder & Wilson, l. c.

KANSU: Fu orr yei, *F. N. Meyer*, no. 1790, October 8, 1914 (Herb. U. S. Dept. Agric.).

DISTRIBUTION: also Chekiang, Hupeh, Szechuan.

PINACEAE

Pinus Armandi Franchet in Nouv. Arch. Mus. Paris, sér. 2, vii. 95, t. 12 (Pl. David. I. 284) (1885).—Beissner in Nuov. Giorn. Ital. n. ser., IV. 184 (1897).—Masters in Jour. Linn. Soc. XXVI. 549 (1902).—Shaw in Sargent, Pl. Wilson. II. 12 (1914); Gen. Pinus, 30, t. 9, fig. 96–99 (1914).—Wilson, Conif. Tax. Jap. 20 (1916).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XXXIX. 134, no. 38468 (1917).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 21 (1922).

Pinus koraiensis Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 184 (1897).—Patschke in Bot. Jahrb. XLVIII. 657 (1912).—Non Siebold & Zuccarini.

Pinus quinquefolia David, Jour. Trois. Voy. Chin. I. 192 (1875).—Bretschneider, Hist. Eur. Bot. Disc. China, 850 (1898).

SHENSI: Ta hua shan, alt. 5000 ft., *F. N. Meyer*, no. 1833 (or 2047a), December 29, 1913 (cones); without locality, *G. Giraldi*.—See also David, l. c., Franchet, l. c., Beissner, l. c., Masters, l. c., Shaw, l. c. and Meyer, l. c.

HONAN: see Hers, l. c.

KANSU: Chi shan, near Cheng hsien, *F. N. Meyer*, no. 1760, October 1, 1914 (sterile branch).

DISTRIBUTION: also Hupeh, Szechuan, Yunnan, Kweichou; Korea, southern Japan, Formosa.

Pinus Bungeana Zuccarini apud Endlicher, Syn. Conif. 166 (1847).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Fortune, Yedo & Peking, 377, 378, fig. (1863).—Hance in Jour. Linn. Soc. XIII. 87 (1873).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 185 (1897).—Pritzel in Bot. Jahrb. XXIX. 215 (1900).—Masters in Jour. Linn. Soc. XXVI. 549 (1902).—Shaw in Sargent, Pl. Wilson. II. 13 (1914); Gen. Pinus, 40, t. 14, fig. 133–137 (1914).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 21 (1922).

CHILI: Peking, temple grounds near Summer Palace, *C. S. Sargent*, September 17, 1903; near Peking, *S. W. Williams*, August, 1876 (Herb.

Gray); same locality, *J. G. Jack*, October 7, 1905, and *F. N. Meyer*, no. 327, December, 1905; Peking University Medical College grounds, planted, *N. H. Cowdry*, no. 2151, September, 1921.—See also Endlicher, l. c., Fortune, l. c. and Masters, l. c.

HONAN: see Hers, l. c.

SHANSI: Hsi po po, alt. 4000 ft., *F. N. Meyer*, no. 1399, October 7, 1914.

SHENSI: *G. Giraldi* (ex Beissner, l. c., and Pritzel, l. c.).

KANSU: Yin kwan chien, near Liang sang, alt. 3600 ft., *F. N. Meyer*, no. 1737, September 23, 1914.

DISTRIBUTION: also Hupeh.

This Pine is restricted to northern China and is not found south of the 31° N. Lat.; its western limit of distribution is southeastern Kansu where it is reported to be "quite plentiful" by F. N. Meyer. This tree was discovered by Bunge on whose specimen Endlicher based his species. Bunge himself mentions it (in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 137 [Enum. Pl. Chin. Bor. 63] [1833]) as one of the two specimens which on account of the absence of cones could not be properly determined.

Pinus sinensis Lambert, Descr. Pinus, ed. minor, I. 47 t. 29 (1832).—Mayr, Fremdl. Wald- u. Parkb. 349, fig. 113 (1906), exclud. synon.—Shaw in Sargent, Pl. Wilson. II. 15 (1914); Gen. Pinus, 60, t. 23, figs. 201–207 (1914).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 21 (1922).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 304 (1922).

Pinus Massoniana Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 137 (Enum. Pl. Chin. Bor. 63) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 364 (Fl. Tché-foû, 131) (1877).—Faber in Denkschr. Entwickel. Kiautschou, 27 (1898).—Pritzel in Bot. Jahrb. XXIX. 215 (1900).—Non Lambert.

Pinus leucosperma Maximowicz in Bull. Acad. Sci. St. Pétersb. XVI. 558 (1881); in Mél. Biol. XI. 347 (1881).

Pinus Thunbergi Debeaux in Act. Soc. Linn. Bordeaux, XXXIII. 66 (Fl. Tientsin, 43) (1879).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 255 (1884); in Nouv. Arch. Mus. Paris, sér. 2, VII. 95 (Pl. David. I. 285) (1884).—Beissner in Nuov. Giorn. Bot. Ital. n. ser., IV. 185 (1897).—Faber in Denkschr. Entwickel. Kiautschou, 27 (1898).—Pritzel in Bot. Jahrb. XXIX. 215 (1900).—Masters in Jour. Linn. Soc. XXVI. 552 (1902).—Non Parlatore.

Pinus densiflora Franchet in Mém. Soc. Sci. Nat. Cherbourg XXIV. 255 (1882).—Pritzel in Bot. Jahrb. XXIX. 215 (1900).—Masters in Jour. Linn. Soc. XXVI. 549 (1902).—?Gilg & Loesener in Bot. Jahrb. XXXIV. Beibl. LXXV. 16 (1904).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Import. XVII. 16, no. 22913 (1909).—?Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 83 (1919).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).—Non Siebold & Zuccarini.

Pinus spec. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 23, no. 22673 (1909).

CHILI: Peking plain, *C. S. Sargent*, September 17, 1903; vicinity of Peking, *Butler*, 1906; Ming tombs, *J. G. Jack*, October, 1905; grounds

of Temple of Heaven, *E. H. Wilson*, no. 2513, May 16, 1910; Tung-ling, *F. N. Meyer*, no. 1172a, November 29, 1908; Weichang, *W. Purdom*, no. 812, 1910; Hsiao Wutai shan, alt. 5000 ft., *F. N. Meyer*, no. 1250, August 22, 1913; without precise locality, *A. Bunge* (Herb. Gray).—See also Bunge, l. c., Maximowicz, l. c., Debeaux, l. c. (1879), Franchet, l. c. (Pl. David.), Masters, l. c., Meyer, l. c. (no. 22913), Shaw, l. c., Cowdry, l. c., and Limpricht, l. c.

SHANTUNG: Tsingtau, *O. Nebel* (ex Gilg & Loesener, l. c.); Lau shan, *A. Engler* (ex Loesener, l. c.).—See also Debeaux, l. c. (1877), Franchet, l. c. (Mém. Cherbourg), Faber, l. c.

HONAN: see Hers, l. c.

SHANSI: Wutai shan, *W. Purdom*, nos. 813, 815, 1911; same locality, *F. N. Meyer*, no. 258, February 27, 1908; Hsi po po, *F. N. Meyer*, no. 1398, October 7, 1914; Tong djan tchang, *F. N. Meyer*, no. 278, March 2, 1908; Wu chai tsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2045, September 7, 1922.—See also Meyer, l. c. (no. 22673).

SHENSI: Ta hua shan, alt. 4000 ft., *F. N. Meyer*, no. 1828, December 29, 1913.—See also Beissner, l. c., Pritzel, l. c.

KANSU: along Tetung River, *N. Przewalski*, August 6, 1880; Tow River Valley, *W. Purdom*, no. 814, 1910.—See also Maximowicz, l. c. (1881).

DISTRIBUTION: also Hupeh, Kiangsi, Szechuan, Yunnan (var. *yunnanensis* Shaw); Manchuria.

The references for Shantung from where I have seen no spontaneous material are doubtful and are, at least partly, based on cultivated trees of *P. densiflora* Sieb. & Zucc. which is planted near Tsingtau and Chifu (C. S. Sargent, September 22, 1903).

Larix Potaninii Batalin in Act. Hort. Petrop. xiii. 385 (1893).—Rehder & Wilson in Sargent, Pl. Wilson. II. 18 (1914).

Larix spec. Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 97 (Pl. David. I. 287) (1884).

Larix chinensis Beissner in Mitteil. Deutsch. Dendr. Ges. V. 68 (1896); in Nuov. Giorn. Bot. Ital. n. ser. IV. 183 t. 5, fig. 1 (1897).—Pritzel in Bot. Jahrb. XXIX. 216 (1900).—Masters in Jour. Linn. Soc. XXVI. 558 (1902).

SHENSI: Tsin-ling range, Tai pei shan, alt. 3000–3300 m., *W. Purdom*, no. 404, 1910. See also Franchet, l. c., Beissner, l. c., Pritzel, l. c. and Masters, l. c.

KANSU: Lotani, road to Siku ting, alt. 3000–3300 m., *W. Purdom*, no. 760, 1911; Peling shan, *W. Purdom*, no. 817, 1911.

DISTRIBUTION: also western Szechuan.

Larix dahurica var. **Principis Rupprechtii** Rehder & Wilson in Sargent, Pl. Wilson. II. 21 (1914).

Larix Principis Rupprechtii Mayr, Fremdl. Wald- u. Parkb. 309, fig. 94 (1906).

Larix spec. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 23, no. 22674 (1909).

Larix dahurica Meyer l. c. XXXVII. 58, no. 36728 (1916).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 304 (1922).—Non Turczaninow.

CHILI: Weichang south, *W. Purdom*, no. 21, 1909; Weichang, north and west, *W. Purdom*, nos. 204, 246, 1909; Hsiao wu tai shan, alt. 9000 ft., *F. N. Meyer*, no. 1121, August 6, 1913; same locality, *J. Hers*, no. 1545, July 14, 1921, no. 1564, July 16, 1921, no. 2116, October 7, 1922. Po hua shan, *J. Hers*, no. 1427, July 1, 1922.—See also Rehder & Wilson, l. c., Meyer, l. c. (1916), and Limpricht, l. c.

SHANSI: Wutai shan, "Thai ling tse" temple, *F. N. Meyer*, no. 259, February 25, 1908; Wutai shan, over the pass, alt. 2600–3000 m., *W. Purdom*, 1909; Wutai village, temple grounds, *W. Purdom*, nos. 161, 161a, 161b, 1909; Wu chai tsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2018, September 7, 1922.—See also Mayr, l. c., Meyer, l. c. (1909), and Rehder & Wilson, l. c.

DISTRIBUTION: also northern Korea.

Picea Wilsonii Masters in Gard. Chron. ser. 3, XXXIII. 133, figs. 55, 56 (1903).—Rehder & Wilson in Sargent, Pl. Wilson, II. 27, 1914.

Picea Mastersii Mayr, Fremdl. Wald- u. Parkb. 328, fig. 105–107 (1906).

Abies spec. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 23, no. 22671 (1909).

Picea Schrenkiana Rehder & Wilson in Sargent, Pl. Wilson, II. 29 (1914), pro parte; non Fischer & Meyer.

CHILI: Weichang, west, south, and northeast, alt. 1300 m., *W. Purdom*, nos. 100, 201, 202, 203, 1909; south of Jehol, *W. Purdom*, no. 205, 1909; Hsiao wutai shan, *F. N. Meyer*, no. 1122, August 6, 1913 (in part); *J. Hers*, no. 1509, July 14, 1921; Hsiao wu tai shan, Tieh ling, *J. Hers*, no. 2114, October 7, 1922; Hsiao wu tai shan, Shuih shih tao, alt. 1500 m., *J. Hers*, nos. 2149, 2155, October 8, 1922; Huai lai tsien, Liu shu chwang, alt. 800 m., *J. Hers*, no. 2071, October 3, 1922.—See also Rehder & Wilson, l. c.

SHANSI: Wutai shan, "Pei san tse" temple, alt. 2000–2300 m., *F.N. Meyer*, no. 256 (22671), April 20, 1908; same locality, *W. Purdom*, no. 145, 1909; Wu chai tsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2041a, September 7, 1922.—See also Mayr, l. c., and Meyer, l. c.

KANSU: Lotani, *W. Purdom*, no. 806, 1911; near Kagoba, *F. N. Meyer*, no. 2001, November 1, 1914 (Herb. U. S. Dept. Agric.). See also Rehder & Wilson, l. c .

DISTRIBUTION: also Hupeh.

Picea Meyeri Rehder & Wilson in Sargent Pl. Wilson. II. 28 (1914).

Abies spec. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 23, no. 22672, 24, no. 22679 (1909).

Picea Schrenkiana Rehder & Wilson, l. c. 29 (1914), pro parte.—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 304 (1922).—Non Fischer & Meyer.

Picea obovata Meyer in U. S. Dept. Agric. Bur. Indust. Invent. Seeds Pl. Imp. XXXVII. 58 no. 36729 (1916); non Ledebour.

CHILI: Hsiao wu tai shan, *F. N. Meyer*, nos. 1122 (in part), 1387, August 6 and 29, 1913; Hsiao wu tai shan, Tieh ling, *J. Hers*, no. 2115, October 7, 1922; Po hua shan, *J. Hers*, no. 1685, September 9, 1921;

near Peking, grave yard, *J. Hers*, no. 1557, January, 1921.—See also Meyer, l. c. (1915), and Limpricht, l. c.

SHANSI: Wutai shan, Temple of "Tchai ling tse," *F. N. Meyer*, no. 257 (22672, type), February 25, 1908; Wutai shan, alt. 3000 m., *W. Purdom*, no. 144, 1910; Ta lau tse, *F. N. Meyer*, no. 275 (S. P. I. no. 22679), March 1, 1908 (Herb. U. S. Dept. Agric.); Wuchai tsien, Ta nan kow, *Tchuang Kieh*, Hers nos. 2032, 2041, September 7, 1922.—See also Meyer, l. c. (1909), Rehder & Wilson, l. c. 28.

KANSU: Tao chau ting, *W. Purdom*, no. 790, 1911; Choni, *W. Purdom*, no. 813, 1911; near Liang dja pa, alt. 2000 m., *F. N. Meyer*, October 14, 1914; Ku len tze, *F. N. Meyer*, November 25, 1914; Tow River, *W. Purdom*, no. 790, 1911.—See also Rehder & Wilson, l. c. 28, 29.

This and the preceding species seem to be the only Spruces which occur in northeastern China; *P. Meyeri* has not yet been found outside of this area, while *P. Wilsonii* extends into northern Hupeh. Additional material received after the publication of the account of these species in Plantae Wilsonianae has shown that both species are very variable, but that it is not possible to distinguish a third species and that the specimens enumerated under *P. Schrenkiana* should be referred partly to *P. Meyeri* and partly to *P. Wilsonii*. These two species are quite distinct; in *P. Wilsonii* the branchlets are slenderer, always glabrous, with very short scarcely raised petioles, and very pale, becoming light gray or whitish the second year, when the bark begins to peel off in small thin flakes; the leaves are rather short and slender and usually straight, the cones are pale yellowish or grayish brown, dull and 4–8 cm. long; in *P. Meyeri* the branchlets are stouter, more or less pubescent, with distinct spreading petioles 1–2 mm. long, and with cinnamon-brown to dull orange-yellow firm and close bark changing later to gray; the leaves are stout, usually curved and obtusish, the cones are brown and lustrous and 6–10 cm. long with firm and stiff scales. The leaves of most of the specimens enumerated here under *P. Wilsonii* have stouter and more obtuse leaves than the type and it is possible that *P. Mastersii* Mayr which was based on Shansi material represents a northern form of *P. Wilsonii* with more obtuse and stouter leaves.

To one of these two species probably belongs the Picea spec. found by Nebel at Tsingtau near Huitshuen (see Bot. Jahrb. XXXIV. beibl. LXXV. 16 [1904] and Beih. Bot. Centralbl. XXXVII. abt. II. 84 [1919]). Nebel also states that dry branches of this Spruce are brought from the Laushan for fuel. As Professor Loesener writes me no specimens of this Shantung Spruce have been sent to the Berlin Botanical Museum.

Picea purpurea Masters in Jour. Linn. Soc. XXXVII. 418 (1906).—Rehder & Wilson in Pl. Wilson, II. 29 (1914).

KANSU: Tao chau ting, *W. Purdom*, no. 815, 1911.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also western Szechuan.

Tsuga chinensis Pritzel in Bot. Jahrb. XXIX. 217 (1900).—Rehder & Wilson in Sargent Pl. Wilson, II, 37 (1914).

SHENSI: southern slopes of the Tai pei shan, alt. 2300 m., *W. Purdom*, no. 668, 1910.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also western Hupeh, Szechuan.

Abies chensiensis Van Tieghem in Bull. Soc. Bot. France, XXXVIII. 413 (1891).—Pritzel in Bot. Jahrb. xxix. 218 (1900).—Rehder & Wilson in Sargent, Pl. Wilson, ii, 44 (1914).

Abies spec. Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII, 100 (Pl. David. I. 290) (1884).

Abies firma Masters in Jour. Linn. Soc. XXVI. 557 (1900), quoad specimen e Shensi; non Siebold & Zuccarini.

SHENSI: Tsin-ling mountains, *A. David* (type) 1872.—See also Franchet, l. c., Rehder & Wilson, l. c.

DISTRIBUTION: also western Hupeh.

Abies Fargesii Franchet in Jour. de Bot. XIII, 256 (1899).—Rehder & Wilson in Sargent, Pl. Wilson. II. 48 (1914).

? *Abies Veitchii* Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 184 (1897).—Pritzel in Bot. Jahrb. XXIX. 218 (1900).—Masters in Jour. Linn. Soc. XXVI. 557 (1902).—Non Lindley.

SHENSI: Tai pei shan, alt. 3000 m., *W. Purdom*, no. 405, 1910.—See also Masters, l. c., Pritzel, l. c., and Rehder & Wilson, l. c. (sub *A. sutchuenensis*).

KANSU: near Kagoba, *F. N. Meyer*, no. 1813, October 30, 1914 (sterile).

DISTRIBUTION: also western Hupeh, eastern Szechuan.

Young plants growing in this Arboretum of Purdom's no. 405 which were in Plantae Wilsonianae doubtfully referred to *A. sutchuenensis*, apparently belong to *A. Fargesii*.

Abies sutchuenensis Rehder & Wilson in Sargent, Pl. Wilson. II. 48 (1914).

KANSU: Lotani, *W. Purdom*, no. 805, 1911; banks of Tow River, *W. Purdom*, no. 823, 1911.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also eastern Szechuan.

Abies nephrolepis Maximowicz in Bull. Acad. Sci. St. Pétersb. sér. 3, X. 486 (1866); in Mél. Biol. VI. 22 (1866).

Abies sibirica Ledeb. var. *nephrolepis* Trautvetter in Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 260 (Prim. Fl. Amur.) (1859).—Rehder & Wilson in Sargent, Pl. Wilson. II. 49 (1914).

CHILI: Hsiao wu tai shan, *J. Hers*, nos. 1537, 1546, July 14, 1921 and no. 1563, July 16, 1921.

SHANSI: Wutai shan, *W. Purdom*, no. 143, 1909.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also Manchuria to Amur region and Korea.

Cunninghamia lanceolata Hooker in Bot. Mag. liv. t. 2743 (1827).—Rehder & Wilson in Sargent, Pl. Wilson. ii. 50, (1914).

Cunninghamia sinensis Brown apud Richard Conif. 80, t. 18, fig. 3 (1826).—Debeaux in Act. Soc. Linn. Bordeaux, xxxi. 364 (Fl. Tché-foû, 131) (1877).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. iv. 185 (1897).—Pritzel in Bot. Jahrb. xxix. 218 (1900).

SHANTUNG: near Chifu (ex Debeaux, l. c.).

SHENSI: *G. Giraldi* (ex Beissner, l. c. and Pritzel, l. c.).

DISTRIBUTION: also Kiangsu, Chekiang, Kiangsi, Hupeh, Szechuan, Yunnan, Kwangtung, Fokien.

Near Chifu the tree is apparently only planted.

Cryptomeria japonica D. Don in Trans. Linn. Soc. xviii. 166, t. 13, fig. 1 (1841).—Gilg in Bot. Jahrb. xxxiv. beibl. lxxv. 16 (1904).—Rehder & Wilson in Sargent, Pl. Wilson. ii. 52 (1914).—Loesener in Beih. Bot. Centralbl xxxvii. abt. ii. 84 (1919).

Planted near Tsingtau, Shantung, by the German Forest Department according to Gilg (l. c.) and Loesener (l. c.).

Cupressus torulosa D. Don, Prodr. Fl. Nepal. 55 (1825).—Rehder & Wilson in Sargent, Pl. Wilson. ii. 54 (1914).

KANSU: open semi-arid valley near Chu kun, *F. N. Meyer*, no. 1981, October 18, 1914.

DISTRIBUTION: also western Szechuan, Yunnan; Himalayas.

Two unnamed species of which I have seen no material are mentioned by Hers (in Jour. N. China Branch R. As. Soc. liii. 109 [1922]; Liste Ess. Lign. Honan, 10 [1922]) as cultivated in Honan. Also *C. funebris* Endl., collected by Limpricht (Bot. Reis. Hochgeb. Chin. Ost-Tib. 305 [1922]) at a temple west of Peking, is probably only planted.

Thuja orientalis Linnaeus, Spec. 1002 (1753).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. ii. 137 (Enum. Pl. Chin. Bor. 63) (1833).—Turczaninow in Bull. Soc. Nat. Moscou, x. no. vii. 157 (1837).—Faber in Denkschr. Entwickel. Kiautschou, 27 (1898).—Pritzel in Bot. Jahrb. xxix. 219 (1900).—Masters in Jour. Linn. Soc. xxvi. 540 (1902).—Gilg in Bot. Jahrb. xxxiv. beibl. lxxv. 16 (1904).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. xii. 60, no. 17926 (1907).—Rehder & Wilson in Sargent, Pl. Wilson. ii. 53 (1914).—Loesener in Beih. Bot. Centralbl. xxxvii. abt. ii. 84 (1919).—Bailey, Gent. Herb. i. 10 (1920).—Hers in Jour. N. China Branch R. As. Soc. liii. 116 (1922); Liste Ess. Lign. Honan, 31 (1922).

Biota orientalis Endlicher, Syn. Conif. 47 (1847).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. ix. 477 (Ind. Fl. Pekin.) (1857).—Debeaux in Act. Soc. Linn. Bordeaux, xxxi. 364 (Fl. Tché-foû, 131) (1877); l.c. xxxiii. 65 (Fl. Tien-tsin, 42) (1879).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, xxiv. 255 (1884).—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. ii. 847 (Pl. Enum. 63) (1891); in Szechenyi, Wissensch. Ergeb. Reise Ostas. ii. 737 (1898).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. iv. 185 (1897).

CHILI: Peking, Temple of Confucius, *C. S. Sargent*, September 15, 1903; Peking, Temple of Heaven, *F. N. Meyer*, no. 393, January, 1907; north of Peking, Ming tombs, *J. G. Jack*, October 6, 1905. See also Bunge, l. c., Turczaninow, l. c., Maximowicz, l. c., Debeaux, l. c. (1879), and Meyer, l. c.

SHANTUNG: near Chifu (ex Debeaux, l. c. [1877] and Franchet, l. c.). near Kiautschou (ex Gilg, l. c.).—See also Faber, l. c. and Loesener, l. c.

HONAN: Kio shan, *L. H. Bailey* (ex Bailey, l. c.).—See also Hers, l. c.

SHENSI: stony mountain slopes near Nan to tchou, south of Sianfu, alt. 2000 ft., *F. N. Meyer*, no. 1846, January 21, 1914; Yenan Fu, *W. Purdom*, no. 355, 1910.—See also Beissner, l. c., Pritzel, l. c., and Rehder & Wilson, l. c.

KANSU: "in valle Wej-ho," *L. Loczy* (ex Kanitz, l. c.).

DISTRIBUTION: also Hupeh, Szechuan; Manchuria, Korea, in other parts of China as in Formosa and Japan probably planted.

Juniperus formosana Hayata in Jour. Coll. Sci. Tokyo XXV. art. XIX. 209, t. 38 (Fl. Mont. Formos.) (1908).—Rehder & Wilson in Sargent, Pl. Wilson II. 56 (1914).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLIII. 65, no. 40678 (1918).

Juniperus rigida Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 102 (Pl. David. I. 292) (1884).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 186 (1897).—Pritzel in Bot. Jahrb. XXIX. 219 (1900).—Non Siebold & Zuccarini.

Juniperus taxifolia Beissner in Giorn. Soc. Bot. Ital. 1901, 360; non Hooker & Arnott.

CHILI: without locality, *Père Chanet*, no. 7, 1918.

SHENSI: Tai pei shan, *W. Purdom*, 1910.—See also Beissner, l. c. and Rehder & Wilson, l. c.

KANSU: Kwatsa on Siku River (ex Meyer, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Kiangsu, Fokien; Formosa.

I have seen no specimens of this species from Kansu and I am not sure if Meyer's determination of the Juniper collected at Kwatsa is correct. According to Hers (in Jour. N. China Branch R. As. Soc. LIII. III [1922]; Liste Ess. Lign. Honan, 16 [1922]) this species is cultivated in Honan; possibly also the specimen collected in Chili by Père Chanet is from a cultivated plant.

Juniperus squamata var. **Fargesii** Rehder & Wilson in Sargent, Pl. Wilson. II. 59 (1914).

Juniperus saltuaria Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLIII. 65, no. 40677 (1918); non Rehder & Wilson.

SHANSI: Yo yang hsien, Shen fo ling, alt. 800 m., *J. Hers*, no. 2468, December 16, 1922 (sterile).

KANSU: Siku, *F. N. Meyer*, no. 1827, November 14, 1914.—See also Meyer, l. c.

DISTRIBUTION: also Szechuan.

Juniperus squamata Lamb. f. **Wilsonii** Rehder in Jour. Arnold Arb. I. 191 (1920).

J. squamata Rehder & Wilson in Sargent, Pl. Wilson II. 57 (1914), pro parte, non Lambert.

Juniperus recurva Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 102 (Pl. David I. 292) (1884).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 186 (1907).—Pritzel in Bot. Jahrb. XXIX. 219 (1900).—Non Hamilton.

SHENSI: Tai pei shan, *W. Purdom*, 1910; without locality, *W. Purdom*, no. 656 (seeds only; plants growing in this Arboretum).—See also Rehder & Wilson, l. c., and Rehder, l. c.

DISTRIBUTION: also Hupeh, Szechuan.

Juniperus squamata var. **Meyeri** Rehder in Jour. Arnold Arb. III. 207 (1922).

? *Juniperus spec.* Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 56, no. 23022 (1909).

CHILI: Tientsin, cultivated, *F. N. Meyer* (ex Rehder, l. c.).—See also Meyer, l. c.

This Juniper is known only as a cultivated plant. In a letter dated February 17, 1923, Mr. J. Hers sends the following additional information about it:

"*Juniperus squamata* var. *Meyeri* is extremely common in the Chinese gardens, where it is known under the name of tsuei pai, which means the kingfisher's thuya; it is generally kept in pots and lends itself very well to those extravagant forms, so much appreciated by the Chinese.

I have never seen it on its own roots; it is always grafted on *Thuya orientalis*. It is a very slow grower; very old specimens may be seen in almost every garden, but they never exceed 5 or 6 feet in height. It is not considered to be hardy in Peking, though it is in Honan. I have never seen it bearing seeds.

As to its origin, I supposed that the one quoted by Meyer, 'south-western Shantung' is nothing else but the Tsaochow district, which used to be the biggest horticultural center of North China, but has now lost some of its importance.

Most of the Peking gardeners agree that the best 'tsuei pai' come not from Tsaochow, but from Lungchüan, which is another horticultural center, a few miles west of Changtefu, in Northern Honan, at the foot of the Shansi hills."

Juniperus chinensis Linnaeus, Mant. 127 (1767).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 137 (Enum. Pl. Chin. Bor. 63) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Debeaux in Act. Soc. Linn. Bordeaux, XXXIII, 66 (Fl. Tien-tsin, 43) (1879).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 256 (1884); in Nouv. Arch. Mus. Paris, sér. 2, VII. 101 (Pl. David. I. 291) (1884).—Beissner in Nuov. Giorn. Bot. Ital. n. ser. IV. 186 (1897).—Faber in Denkschr. Entwickel. Kiautschou, 27 (1898).—Pritzel in Bot. Jahrb. XXIX. 220 (1900).—Masters in Jour. Linn. Soc. XXVI. 541 (1902).—Rehder & Wilson in Sargent, Pl. Wilson. II. 60 (1914).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XL. 65, no. 40679, 66, no. 40680 (1918).—Bailey, Gent. Herb. I. 10 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 111 (1922); Liste Ess. Lign. Honan, 16 (1922).

CHILI: Peking, Temple of Confucius, *C. S. Sargent*, September, 1903, *J. G. Jack*, October 3, 1905; Peking, Temple of Heaven, *J. G. Jack*, October 3, 1905; without precise locality, *Père Chanet*, nos. 49, 50, 1918.—See also Bunge, l. c., Maximowicz, l. c., Franchet, l. c. (Pl. David.), and Masters, l. c.

SHANTUNG: see Franchet, l. c. (Mém. Cherbourg), and Faber, l. c.

HONAN: see Bailey, l. c. and Hers, l. c.

SHENSI: base of the Tai pei shan, *W. Purdom*, 1910; near Sianfu, *F. N. Meyer*, no. 1712, July 25, 1914; without locality, *G. Giraldi*, 1897.—See also Beissner, l. c., Masters, l. c., Rehder & Wilson, l. c. and Meyer, l. c.

KANSU: Cultivated; see Meyer, l. c.

DISTRIBUTION: also Kiangsu, Hupeh, Szechuan, Hunan, Fokien; Korea, Japan.

According to Hers (l. c.) this species and *J. chinensis* var. variegata Fort. are planted in Honan; also Bailey (l. c.) found the species only planted, but states that the trees in Kio shan are said to have been transferred from the wild.

Juniperus chinensis var. **pendula** Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 101 (Pl. David. I. 291) (1884).

SHENSI: Tsin ling shan, *A. David*, January, 1873 (fragments and photograph of type specimen).

Juniperus saltuaria Rehder & Wilson in Sargent, Pl. Wilson. II. 61, (1914).

KANSU: Peling shan, alt. 3300–3600 m., *W. Purdom*, 1911.

DISTRIBUTION: also northwestern Szechuan.

GNETACEAE

Ephedra equisetina Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. VII. 499 (1851).—Stapf in Denkschr. Math.-Nat. Cl. Akad. Wiss. Wien, LVI. pt. 2, 81, t. 3, fig. XXI. 1–4 (Art. Ephedra) (1889).—Skan in Jour. Linn. Soc. XXVI. 538 (1899).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 305 (1922).

Ephedra vulgaris Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859); non Richard.

Ephedra procera Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 94 (Pl. David. I. 284) (1884); non C. A. Meyer.

Ephedra sp. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 57, no. 23026 (1909).—Hers in Jour. N. China Branch R. As. Soc. LIII. 110 (1922); Liste Ess. Lign. Honan, 12 (1922).

CHILI: Peitaho, rocks at sea-shore, *N. H. Cowdry*, no. 489, 1918.—See also Maximowicz, l. c., Franchet, l. c., Stapf, l. c., Skan, l. c., Cowdry, l. c. and Limpricht, l. c.

HONAN: cultivated (ex Hers, l. c.).

SHANSI: Tai yuen fu, cultivated, *F. N. Meyer*, no. 688, March 31, 1908 (ex Meyer, l. c.).

KANSU: Ta tsing chan, *A. David* (ex Franchet, l. c., Stapf, l. c. and Skan, l. c.).

DISTRIBUTION: also Central Asia.

I have not seen Meyer's specimen, but there is a plant under his number growing in this Arboretum; Meyer states that the cultivated plants he

saw had come from Honan, where the Ephedra is also cultivated according to Hers (l. c.).

Ephedra intermedia C. A. Meyer var. **glauca** Stapf in Denkschr. Math.-Nat. Cl. Akad. Wiss. Wien, LVI. pt. 2, 62, t. 2, fig. XV. 3, 5, 8 (Art. Ephedra) (1889).—Skan in Jour. Linn. Soc. XXVI. 539 (1902).

KANSU: *N. Przewalski* (ex Stapf, l. c. and Skan, l. c.).

DISTRIBUTION: also Central Asia to Persia and Kashmir.

Ephedra monosperma C. A. Meyer, Versuch Monog. Ephedra, 89, t. 8, fig. 11 (1847).—Stapf in Denkschr. Math.-Nat. Cl. Akad. Wiss. Wien, LVI. pt. 2, 73, t. 3, fig. XIX. 1–9, XXXI. 3 (Art. Ephedra) (1889).—Skan in Jour. Linn. Soc. XXVI. 539 (1902).

KANSU: *N. Przewalski* (ex Stapf, l. c. and Skan, l. c.).

DISTRIBUTION: also Central Asia to the Amur.

GRAMINEAE

Sasa spec.

Arundinaria spec. Loesener in Beih. Bot. Centralbl. XXXVII. 92 "Vielleicht *A. japonica* Sieb. & Zucc." (1919).

SHANTUNG: Lau shan, *O. Nebel* (ex Loesener, l. c.).

This Bamboo is said to be common in the valleys and to grow up to 8 m. tall near the monastery Lanting, but to remain low and scrubby at higher altitudes.

Arundinaria nitida Mitford in Gard. Chron. ser. 3, XVIII. 186, t. 33 (1895).—Rendle in Jour. Linn. Soc. XXXVI. 436 (1904).—Camus, Bambusées, 33, t. 9, fig. A, t. 12, fig. A (1913).—Purpus in Moeller's Deutsch. Gaertn.-Zeit. XXX. 93, fig. (1915).

SHENSI: Tai pei shan, *W. Purdom*, no. 980, 1910.

KANSU: No collection, but cultivated as *Arundinaria spec.* Kansu (ex Purpus, l. c.).

DISTRIBUTION: also Szechuan, Hupeh.

Though this species has been distributed by the firm of Regel and Kesselring, St. Petersburg, under the designation *Arundinaria spec.* Kansu, as stated by Purpus (l. c.) and as I found it myself in several gardens, there seems to be no record of any specimens collected in Kansu. It is, however, possible that it really grows in southern Kansu, as it was originally discovered by Potanin in northern Szechuan and has also been collected by Purdom in southern Shensi.

Phyllostachys reticulata K. Koch, Dendr. II. 2, 356 (1873).—Makino in Tokyo Bot. Mag. XXVI, 19, fig. 6 (1912).

Phyllostachys bambusoides Siebold & Zuccarini in Abh. Akad. Muench. III. 746, t. 5, fig. 3 (1843).— Loesener in Beih. Bot. Centralbl. XXVII. abt. II. 92 (1919).

SHANTUNG: Cape Yatau, near Tai tsching kung (ex Loesener, l. c.).

DISTRIBUTION: also Japan.

To this species probably belongs at least one of the three Phyllostachys sp. from Honan mentioned by Hers (Liste Ess. Lign. Honan, 20, 21 [1922]).

LILIACEAE

Smilax herbacea L. var. **acuminata** Wright in Jour. Linn. Soc. XXXVI. 97 (1903).—Norton in Sargent, Pl. Wilson. III. 1 (1916).

SHENSI: Tai pei shan, *W. Purdom*, no. 1097, 1910.

DISTRIBUTION: also Kiangsi, Hupeh, Szechuan; Manchuria.

Smilax herbacea L. var. **flaccida** Norton apud Bailey, Gent. Herb. I. 15 (1920).

HONAN: Chi kung shan, *L. H. Bailey* (ex Bailey, l. c.).

DISTRIBUTION: also Hupeh.

Smilax herbacea L. var. **angusta** Wright in Jour. Linn. Soc. XXXVI. 98 (1903).

SHANTUNG: Chifu, among rocks on hills, *N. H. Cowdry.*

DISTRIBUTION: also Hupeh.

The plant from Lau shan, and Cape Yatau (ex Gilg & Loesener in Bot. Jahrb. XXXIV. beibl. LXXV. 26 [1904] and ex Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 103 [1919]) seems to represent a different variety according to a fragment of Krug's no. 577 before me which is entirely destitute of tendrils and has rather small elliptic slender-petioled leaves.

Smilax Oldhamii Miq. var. **ussuriensis** A. De Candolle, Monog. Phaner. I. 54 (1878).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 257 (1882).—C. H. Wright in Jour. Linn. Soc. XXXVI. 100 (1903).

SHANTUNG: Chifu, *A. A. Fauvel* (ex Franchet, l. c. and Wright, l. c.).

DISTRIBUTION: also Korea, Manchuria.

Smilax microphylla C. H. Wright in Kew Bull. Misc. Inform. 1895, 117.—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 23 (1905).—Norton in Sargent, Pl. Wilson. III. 2 (1916).

SHENSI: *G. Giraldi*, no. 6999 (ex Diels, l. c.).

DISTRIBUTION: also Hupeh, Szechuan.

Smilax Sieboldii Miquel in Versl. Kon. Med. Kon. Akad. Wetensch. ser. 2, II. 87 (1868).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 103 (1919).

Smilax Nebelii Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 26 (1904).—Norton in Sargent, Pl. Wilson. III. 12 (1916).

SHANTUNG: Lau shan, Cape Yatau (ex Gilg, l. c. and Loesener, l. c.).

DISTRIBUTION: also Korea, Japan.

Smilax scobinicaulis C. H. Wright in Kew Bull. Misc. Inform. 1895, 117.—Norton in Sargent, Pl. Wilson. III. 2 (1916).—Hers in Jour. N.

China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 29 (1922).

Smilax brevipes Warburg in Bot. Jahrb. XXIX. 258 (1900).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 23 (1905).

CHILI: without locality, *Père Chanet*, no. 19, 1918.

HONAN: Yung ning, Tsi li ping, *J. Hers*, no. 458, May 22, 1919.—See also Hers l. c.

SHANSI: Yuan kin hsien, Ni shan, *J. Hers*, no. 1821, September 28, 1921.

SHENSI: *G. Giraldi* (ex Diels, l. c.).

DISTRIBUTION: also Hupeh.

Smilax pekingensis A. De Candolle, Monog. Phaner. I. 108 (1878).—C. H. Wright in Jour. Linn. Soc. XXXVI. 100 (1903).—Norton in Sargent, Pl. Wilson. III. 2 (1916).

CHILI: Peking, *H. Wawra* (ex A. De Candolle, l. c. and Wright, l. c.).

SHENSI: Tai pei shan, *W. Purdom*, no. 1299, 1910.

DISTRIBUTION: also Szechuan.

Smilax vaginata Decaisne in Jacquemont, Voyage, IV. Bot. 169, t. 169 (1844).—Norton in Sargent, Pl. Wilson. III. 2 (1916).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XL. 33, no. 38827 (1917).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 29 (1922).

?Smilax stans Maximowicz in Bull. Acad. Sci. St. Pétersb. XVII. 170 (1872); in Mél. Biol. VIII. 407 (1872).—Warburg in Bot. Jahrb. XXXVI. beibl. LXXXII. 23 (1905).

CHILI: without locality, *Père Chanet*, 1918.

HONAN: without locality, *J. Hers*.—See also Hers, l. c.

SHENSI: Ta hua shan, shady places, alt. 1300 m., *F. N. Meyer*, no. 1390, December 29, 1913; Tai pei shan, *W. Purdom*, no. 1100, 1910.—See also Meyer, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan, northwest Himalayas.

Smilax trachypoda Norton in Sargent Pl. Wilson. III. 3 (1916).

?Smilax stans Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 23 (1905); non Maximowicz.

SHENSI: Tai pei shan, western valley, *W. Purdom*, no. 431, 1910.—See also Diels, l. c.

KANSU: Chi-shan, near Cheng hsien, *F. N. Meyer*, no. 1751, October 1, 1914 (Herb. U. S. Dept. Agric.).

DISTRIBUTION: also Hupeh.

As I have not seen any of Giraldi's specimens cited by Diels, it remains doubtful if *S. stans* of Diels belongs to this or to the preceding species.

Smilax china Linnaeus, Spec. 1029 (1753).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 258 (1884).—C. H. Wright in Jour. Linn. Soc. XXXVI. 96 (1903).—Gilg & Loesener in Bot. Jahrb. XXXIV. beibl. LXXV. 25 (1904).—Norton in Sargent, Pl. Wilson. III. 4 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 103 (1919).—Bailey, Gent. Herb. I. 15 (1920).

SHANTUNG: *A. C. Maingay;* Chifu, *E. Faber* (ex Wright, l. c.), *A. A. Fauvel* (ex Franchet, l. c.); Lau shan, *O. Nebel* (ex Gilg & Loesener, l. c., and ex Loesener, l. c.).

HONAN: Chi kung shan, *L. H. Bailey* (ex Bailey, l. c.).

DISTRIBUTION: also Kiangsu, Chekiang, Kiangsi, Hupeh, Szechuan, Fokien, Kwangtung, Hongkong, Kwangsi; Korea, Formosa.

Smilax menispermoidea A. de Candolle, Monog. Phaner. I. 108 (1878).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 23 (1905).

SHENSI: *G. Giraldi* (ex Diels, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Yunnan; Sikkim.

Smilax glauco-china Warburg in Bot. Jahrb. XXIX. 255 (1900).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 22 (1905).—Norton in Sargent, Pl. Wilson. III. 5 (1916).—Bailey, Gent. Herb. I. 15 (1920).

HONAN: Chi kung shan, *L. H. Bailey* (ex Bailey, l. c.).

SHENSI: "Huo kia zaez," *G. Giraldi*, no. 6967 (ex Diels, l. c.).

DISTRIBUTION: also Kiangsi, Hupeh.

Smilax discotis Warburg in Bot. Jahrb. XXIX. 256 (1900).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 22 (1905).—Norton in Sargent, Pl. Wilson. III. 6 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 28 (1922).

Smilax longipes Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); non Warburg.

HONAN: Sung hsien, San kuan miao, alt. 1400 m., *J. Hers*, no. 529, May 24, 1919; Lu shih, Hiung eul shan, alt. 1300 m., *J. Hers*, no. 874, October 9, 1919; Lu shih, Lao kiun shan, *J. Hers*, nos. 1170, 1186, September 21, 1919.—See also Hers, l. c.

SHENSI: Tai pei shan, *W. Purdom*, no. 1098, 1910.—See also Diels, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan.

Smilax discotis var. **concolor** Norton in Sargent, Pl. Wilson. III. 6 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 28 (1922).

HONAN: Yung ning, Tsi li ping, alt. 1000 m., *J. Hers*, no. 1355, September 30, 1919; Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, no. 1257, September 25, 1919; Lu shih, Hiung eul shan, alt. 1300 m., *J. Hers*, nos. 869, 875, October 9, 1919.—See also Hers, l. c.

DISTRIBUTION: also Hupeh.

Heterosmilax Gaudichaudii Maxim. ex Hers. in Jour. N. China Branch R. As. Soc. LIII. 111 (1922); Liste Ess. Lign. Honan, 14 (1922), is probably a mistake; there is no *Heterosmilax Gaudichaudiana* Maxim. in the collection sent by Mr. Hers to this Arboretum and it is very doubtful if the range of that species extends as far north as Honan.

SALICACEAE

Populus euphratica Olivier, Voy. Empire Othoman. III. fig. 45–46 (1807).—Burkill in Jour. Linn. Soc. XXVI. 536 (1899).—Schneider in Sargent, Pl. Wilson. III. 30 (1916).

CHILI: Peking, *R. Alcock* (ex Burkill, l. c.).

KANSU: beyond the Great Wall, *P. J. Piasezki* ex Maximowicz (ex Burkill, l. c.).

DISTRIBUTION: also Central and Western Asia, North Africa.

It is extremely doubtful if the specimens recorded from Chili and from Kansu belong to this species, and I suppose that specimens of *P. tomentosa* Carr. with small deeply dentate and glabrous leaves have been taken for *P. euphratica*.

Populus suaveolens Fischer in Allgem. Garten-Zeit. IX. 404 (1841).—Maximowicz in Bull. Soc. Nat. Moscou, LIV. 51 (1879).—Schneider in Sargent, Pl. Wilson. III. 18 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 22 (1922).

Populus balsaminifera (*sic*) Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 842 (Pl. Enum. 57) (1891); in Szechenyi, Wissensch. Ergeb. Reise Ostas. II. 732 (1898); non *P. balsamifera* L.

Populus balsamifera var. *suaveolens* Loudon, Arb. Brit. III. 1674 (1838).—Burkill in Jour. Linn. Soc. XXVI. 535 (1899), pro parte.—Seemen in Bot. Jahrb. XXIX. 275 (1900).

CHILI: Huai lai hsien, Liu shu chwang, alt. 800 m., *J. Hers*, nos. 2079, 2080, October 3, 1922; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, no. 2091, October 4, 1922; Ta hung men, *J. Hers*, no. 2217, October 10, 1922; Hsiao wu tai shan, alt. 1800 m., *F. N. Meyer*, no. 1311, August 23 and 28, 1913; same locality, *J. Hers*, no. 1488, July 14, 1921; Pohua shan, *J. Hers*, no. 1654, September 9, 1921; Nankow, *J. Hers*, no. 1597, August 14, 1921; Peking plain, *C. S. Sargent*, September 17, 1903; Jehol, *W. Purdom*, no. 2, 1909.—See also Maximowicz, l. c., Burkill, l. c. and Schneider, l. c.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers nos. 2021, 2022, September 7, 1922; Lin hsien, Nan yan shan, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2067, September 11, 1922.

SHENSI: Yenan fu district, *W. Purdom*, no. 351, 1910.—See also Burkill, l. c. and Seemen, l. c.

KANSU: between the river Hoangho and the Great Wall, *P. J. Piasezki* (ex Maximowicz, l. c., Burkill, l. c. and Schneider, l. c.), *L. Loczy* (ex Kanitz, l. c.).

DISTRIBUTION: also Szechuan; Manchuria, Sungaria to Turkestan.

Plants raised from cuttings received from Purdom under nos. 283, 283a, 672, 672a are growing in this Arboretum.

Populus suaveolens var. **Przewalskii** Schneider in Sargent, Pl. Wilson. III. 32 (1916).

Populus Przewalskii Maximowicz in Mél. Biol. XI. 321 (1881); in Bull. Acad. Sci. St. Pétersb. XXVII. 540 (1882).—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 842 (Pl. Enum. 57) (1891); in Szechenyi, Wissensch. Ergebn. Reise Ostas. II. 732 (1898).—Burkill in Jour. Linn. Soc. XXVI. 537 (1899).

KANSU: between the river Hoangho and the Great Wall, *N. Przewalski* (ex Maximowicz, l. c., and Schneider, l. c.); *L. Loczy* (ex Kanitz, l. c.).

DISTRIBUTION: also Mongolia, eastern Tibet.

Populus Purdomii Rehder in Jour. Arnold Arb. III. 225 (1922).

Populus suaveolens Przewalski Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Import. XLII. 35, pl. 5 (1918); non Schneider.

SHENSI: Tai pei shan, *W. Purdom*, no. 1111 (type), 1910, no. 1110, 1910.—See also Rehder, l. c.

KANSU: near Kagoba, alt. 2300–2600 m., *F. N. Meyer*, nos. 1816, 1993, October 30, 1914; Yin kwan dien, *F. N. Meyer*, no. 1945, September 23, 1914.—See also Meyer, l. c. and Rehder, l. c.

DISTRIBUTION: also Szechuan.

Populus Simonii Carrière in Rev. Hort. 1867, 360.—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 841 (Pl. Enum. 58) (1891); in Szechenyi, Wissensch. Ergeb. Reise Ostas. II. 732 (1898).—Schneider in Sargent, Pl. Wilson. III. 21 (1916).—Bailey, Gent. Herb. I. 16 (1920).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaho) (1922).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 22 (1922).

Populus balsamifera var. *Simonii* Wesmael in Bull. Soc. Bot. Belg. XXVI. 378 (1887).—Burkill in Jour. Linn. Soc. XXVI. 536 (1899).

Populus balsamifera var. *laurifolia* Burkill, l. c. 535 (1899), ? in part; non Wesmael.

CHILI: near San tun ying on sandy places along mountain streams, *F. N. Meyer*, nos. 974, 975, May 31, 1913; Kalgan, Methodist compound, *N. H. Cowdry*, no. 1441, June 6, 1921; Nankow, *J. G. Jack*, October 6, 1905; Si wan tze, *G. E. Simon* (ex Burkill, l. c.); Ta han ling, *J. Hers*, no. 1642, September 7, 1921; Po hua shan, *J. Hers*, no. 1561, September 9, 1921; Huai lai hsien, Liu shu chwang, alt. 800 m., *J. Hers*, no. 2073, Oct. 3, 1922; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, no. 2090, October 4, 1922; Peking, western hills, alt. 600–700 m., *J. Hers*, nos. 2219, 2227, October 11, 1922; Peking, *J. Hers*, nos. 2255, 2256, 2257, 2259, October 18, 1922.—See also Burkill, l. c., Schneider, l. c. and Cowdry, l. c.

HONAN: Nei hwang, alt. 100 m., *J. Hers*, no. 2557, October 31, 1922.—See also Bailey, l. c. and Hers, l. c.

SHENSI: Lung chow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2333, July 3, 1922.

KANSU: *L. Loczy*, no. 184 (ex Kanitz, l. c.).

DISTRIBUTION: also Hupeh, Szechuan; Manchuria, Korea.

Populus Simonii f. fastigiata Schneider in Sargent, Pl. Wilson. III. 22 (1916).

CHILI: Shi ling, planted, *F. N. Meyer*, photograph no. 5288, April 13, 1907 and no. 5412, January 25, 1908; plants raised from cuttings introduced from that locality are growing in this Arboretum.

SHANTUNG: Tsinan fu, planted, *F. N. Meyer*, photograph no. 5335, September 26, 1907, no. 5831, April 8, 1913.

Populus nigra L. var. **italica** Du Roi, Harbk. Baumz. II. 141 (1772).—Schneider in Sargent, Pl. Wilson. III. 36 (1916).

Populus nigra var. *sinensis* Carrière in Rev. Hort. 1867, 340.—Maximowicz in Bull. Soc. Nat. Moscou, LIV. 50 (1879).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 255 (1884).—Burkill in Jour. Linn. Soc. XXVI. 536 (1899).—Seemen in Bot. Jahrb. XXIX. 275 (1900).

? *Populus acuta* David, Jour. Trois. Voy. Chin. I. 294 (1875).—Bretschneider, Hist. Eur. Bot. Disc. China, 851 (1898).

CHILI: Peking, Temple of Heaven grounds, *N. H. Cowdry*, no. 2153, November 21, 1921; without locality, *G. E. Simon* (ex Carrière, l. c.).

SHANTUNG: near Chifu, cultivated ?, *A. A. Fauvel* (ex Franchet, l. c.).

SHENSI: near Pai shi pu, planted, *F. N. Meyer*, no. 1942, September 18, 1914; without locality, *P. J. Piasezki* (ex Maximowicz, l. c., Burkill, l. c., Seemen, l. c. and Schneider, l. c.).—See also David, l. c.

KANSU: *P. J. Piasezki* (ex Maximowicz, l. c., Burkill, l. c. and Schneider. l. c.).

DISTRIBUTION: also cultivated in Europe and western Asia.

This Poplar has been planted wherever it occurs in China.

Populus tomentosa Carrière in Rev. Hort. 1867, 340.—Schneider in Sargent, Pl. Wilson. III. 37 (1916).—Bailey, Gent. Herb. I. 16 (1920). —Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 22 (1922).

? *Populus coriacea* David, Trois. Voy. Chin. I. 294 (1875), nomen.

Populus alba var. *denudata* Maximowicz in Bull. Soc. Nat. Moscou, LIV. 48 (1879); non Hartig.

Populus alba Franchet in Mém. Sci. Nat. Cherbourg, XXIV. 255 (1884).—Burkill in Jour. Linn. Soc. XXVI. 535 (1899).—Seemen in Bot. Jahrb. XXXIV. beibl. LXXV. 28 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 106 (1919).—Non Linnaeus.

Populus alba var. *tomentosa* Wesmael in Bull. Soc. Bot. Belg. XXVI. 373 (1887).—Burkill in Jour. Linn. Soc. XXVI. 535 (1899).

CHILI: near Peking, *E. Bretschneider;* same locality, *J. G. Jack*, October 7, 1905, *N. H. Cowdry*, no. 2154, November 15, 1920, and *J. Hers*, no. 2258, October 18, 1922; Yellow Temple near Peking, *C. S. Sargent*, September 16, 1903.—See also Carrière, l. c., Maximowicz, l. c., Burkill, l. c., and Schneider, l. c.

SHANTUNG: Tsingtau, *O. Nebel*, *R. Zimmermann*, no. 297 (ex Seemen, l. c. and ex Loesener, l. c.); near Chifu, cultivated (ex Franchet, l. c.).

HONAN: Kio shan, *L. H. Bailey*, June 22, 1917.—See also Bailey, l. c., and Hers, l. c.

SHENSI: northwest of Han cheng hsien, rare in district, *W. Purdom*, no. 377, 1910.

KANSU: Chu kun, planted along roadsides, *F. N. Meyer*, no. 1801, October 18, 1914; Tsing chow, Wu shih li pu, alt. 1500 m., *J. Hers*, no. 2410, July 4, 1922; Fu kiang hsien, alt. 1400 m., *J. Hers*, no. 2422, August 21, 1922; Anting hsien, Tsang ko chen, alt. 2100 m., *J. Hers*, no. 2426, August 26, 1922.

Meyer's no. 1801 from Kansu which is from a planted tree agrees with typical *P. tomentosa* from near Peking, while Hers' specimens from eastern Kansu all have smaller leaves and no. 2422 which consists of a young shoot has deeply lobed leaves white-tomentose beneath and looks much like *P. alba* as does Purdom's no. 377 from Shensi, but they have the glabrous or glabrescent winter-buds of *P. tomentosa*.

Possibly *P. tomentosa* is only an extreme form of *P. alba* L.

Populus laurifolia Ledebour, Fl. Alt. IV. 297 (1833).—Schneider in Sargent, Pl. Wilson. III. 35 (1916).

Populus balsamifera var. *laurifolia* Wesmael in De Candolle Prodr. XVI. pt. II. 330 (1868).—Burkill in Jour. Linn. Soc. XXVI. 535 (1899), ? in part.

Populus sp. Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922).

CHILI: banks of Lan ho River near Jehol, common, planted, *N. H. Cowdry*, no. 2155, November, 1920.—See also Burkill, l. c.

HONAN: Lu shih, Fan lin, alt. 600 m., *J. Hers*, no. 1100, October 15, 1919; Yung ning, Chung yang, *J. Hers*, no. 1128, October 18, 1919.—See also Hers, l. c.

DISTRIBUTION: also Siberia.

Not without hesitation I refer to *P. laurifolia* Cowdry's specimen from Chili and Hers' specimens from Honan. They consist of vigorous, strongly angled shoots with large ovate or elliptic-ovate to nearly oblong-ovate leaves 10–20 cm. long, distinctly broadest below the middle and rounded at base and borne on rather slender petioles 2–5 cm. long. Mr. Hers describes his no. 1100 as a tall tree with white and smooth bark, its wood superior to that of *P. suaveolens*, but inferior to that of *P. tomentosa* and the leaves as not edible, and of no. 1128 he says that it is called by the Chinese ku yang (= bitter poplar), because the leaves, though resembling those of *P. suaveolens*, are not edible.

Populus laurifolia differs from *P. suaveolens* Fisch. chiefly in the strongly angled shoots of light grayish brown or yellowish brown color and from *P. Simonii* Carr. in the larger leaves distinctly broadest below the middle and rounded or even slightly subcordate at the base and in the longer petioles. Schneider refers the specimens cited by Burkill under *P. balsamifera* var. *laurifolia* to *P. Simonii*, probably under the assumption that *P. laurifolia* does not occur in northern China and he may be right, but more complete material is needed to determine accurately the distribution of the Poplars of northeastern and eastern Asia.

Populus adenopoda Maximowicz in Bull. Soc. Nat. Moscou, LIX. 50 (1879).—Seemen in Bot. Jahrb. XXXIV. beibl. LXXV. 274 (1904).—Schneider in Sargent, Pl. Wilson. III. 23 (1916).—Bailey, Gent. Herb. I. 16 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 22 (1922).

Populus tremula var. *adenopoda* Burkill in Jour. Linn. Soc. XXVI. 537 (1899).

HONAN: Kio shan, in the hills, *L. H. Bailey*, June 24, 1917; Kio shan, planted in village, same collector and date; Yung ning, She pa pan, *J. Hers*, no. 846, October 7, 1919; Yung ning, Chang shui, *J. Hers*, nos. 1133, 1134, October 18 and 19, 1919.—See also Hers, l. c.

SHENSI: "ad fl. Han," *P. J. Piasezki* (ex Maximowicz, l. c., Burkill, l. c. and Seemen, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Kweichou, Hunan, Kiangsi, Kiangsu, Chekiang.

Populus tremula L. var. **Davidiana** Schneider in Sargent, Pl. Wilson. III. 23 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 22 (1922).

Populus venusta David, Jour. Trois. Voy. Chin. I. 294 (1875), nomen.

Populus tremula Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 94 (Pl. David I. 284) (1884).—Burkill in Jour. Linn. Soc. XXVI. 537 (1899).

CHILI: Weichang, *W. Purdom*, no. 11, 1910; Tung ling, grove near Temple, *N. H. Cowdry*, no. 1296, May 18, 1921; Wu tai shan, alt. 2000 m., *F. N. Meyer*, no. 1113, August 5, 1913; Hsiao wutai shan, Tieh ling, alt. 1300 m., *J. Hers*, no. 2134, October 7, 1922; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, no. 2087, October 4, 1922: Po hua shan, *J. Hers*, nos. 1417, 1419, May 1, 1921; without locality, *Père Chanet*, no. 80, 1918.—See also Franchet, l. c. and Burkill, l. c.

HONAN: Teng feng hsien, Yu tai shan, alt. 1500 m., *J. Hers*, no. 216, April 23, 1919; Yung ning, Tsi li ping, *J. Hers*, no. 461, May 22, 1919; Hwei hsien, Shang lieh kiang, *J. Hers*, no. 727, June 17, 1919; Lushih, Lao kiun shan, alt. 2000 m., *J. Hers*, no. 1224, September 21, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1707, September 18, 1921; without precise locality, *J. Hers*, no. 5, 1918.—See also Hers, l. c.

SHANSI: Hsi po po, *F. N. Meyer*, no. 1656, July 10, 1914; Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2020, September 7, 1922; Lin hsien, Nan yang shan, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2068, September 11, 1922.

SHENSI: Yenan fu, *W. Purdom*, no. 359, 1910; northwest of Han cheng hsien, *W. Purdom*, no. 1041, 1910; Lung chow, Li kia po, alt. 1400 m., *J. Hers*, no. 2380, July 4, 1922.

KANSU: *N. Przewalski* (ex Burkill, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Yunnan; Manchuria, Amur and Ussuri regions, Korea, Hokkaido.

Salix Wilsonii Seemen in Bot. Jahrb. XXXVI. beibl. LXXXII. 28 (1905).—Schneider in Sargent, Pl. Wilson. III. 40 (1916).—Hers in Jour. N.

China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 28 (1922).

HONAN: Yung ning, Tsi li ping, *J. Hers*, nos. 428, 436, May 22, 1919; Teng feng hsien, Yu tei shan, *J. Hers*, no. 254, April 23, 1919, no. 305, June 17, 1919.—See also Hers, l. c.

DISTRIBUTION: also Kiangsu, Chekiang, Hupeh, Kweichou.

The specimens are sterile except no. 436 which bears a remnant of a fruiting catkin.

Salix glandulosa Seemen in Bot. Jahrb. XXI. beibl. LIII. 55 (1896); XXIX. 276 (1900).—Schneider in Sargent, Pl. Wilson. III. 98 (1916); in Bailey, Gent. Herb. I. 17 (1920).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 106 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 27 (1922).

HONAN: Chi kung shan, *L. H. Bailey*, June 6 and 14, 1917; Lushih, Tang ho, alt. 1000 m., *J. Hers*, no. 952, October 11, 1919; without precise locality, *J. Hers*, no. 11, 1918.—See also Schneider, l. c. (1920) and Hers, l. c.

SHENSI: Ko lu pa, *G. Giraldi* (ex Seemen, l. c. [1900]).

DISTRIBUTION: also Korea, Japan.

The differences between *S. Wilsonii* and *S. glandulosa* seem to be very slight and both are possibly only forms of one species, as suggested already by Schneider (in Bailey, Gent. Herb. I. 17). Loesener enumerates (l. c.) also a *S. glandulosa* forma vel pl. hybrida collected at Haipo. The plant has one or mostly two stamens and may be a hybrid with a diandrous species.

Salix chikungensis Schneider in Bailey, Gent. Herb. I. 17, fig. 3, c, d (1920).

HONAN: Chi kung shan, *L. H. Bailey*, June 14, 1917.—See also Schneider, l. c.

Salix paraplesia Schneider in Sargent, Pl. Wilson. I. 40 (1916).—Hers, Liste Ess. Lign. Honan, 27 (1922).

Salix—Bailey, Gent. Herb. I. 18 (1920).

HONAN: Chi kung shan, *L. H. Bailey*, June 14, 1917; Lushih, Kiao ho, alt. 1000 m., *J. Hers*, no. 968, October 13, 1919; Yung ning, Chuan pao shan, alt. 1500 m., *J. Hers*, no. 1114, October 17, 1919; Sung hsien, Shih tze miao, *J. Hers*, no. 1251, September 25, 1919.—See also Bailey, l. c., and Hers, l. c.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers nos. 2024 (fruiting branch), 2025 (sterile).

SHENSI: Lung chow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2336, July 3, 1922; Lung chow, Li kia po, alt. 1400 m., *J. Hers*, no. 2393, July 4, 1922.

Hers' no. 2024 from Shansi agrees perfectly with the type of *S. paraplesia* in the leaves and the fruiting catkins and also the sterile no. 2025 does not differ; no. 2393 from Shensi agrees in the fruiting catkins but the leaves

are narrower and the petioles and young branchlets puberulous. The specimens from Honan are all sterile and agree well with Wilson's no. 1441 from Hupeh doubtfully referred by Schneider to *S. paraplesia*, but Hers' nos. 968 and 1251 are furnished on the underside of the leaves with scattered appressed silky hairs and, while the original specimen of 1441 shows no trace of pubescence, plants cultivated in the Arnold Arboretum under Wilson's no. 1441 have the midrib beneath and the young branchlets often slightly pubescent.

Salix amygdalina Linnaeus, Spec. 1016 (1753).—Schneider in Sargent, Pl. Wilson. III. 106 (1916).

Salix triandra f. *submaritima* Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 363 (Fl. Tché-foû, 130) (1877).

Salix amygdalina f. *subdiscolor* Debeaux in Act. Soc. Linn. Bordeaux, XXXIII. 64 (Fl. Tien-tsin, 41) (1879).

Salix triandra Linnaeus, Spec. 1016 (1753).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 255 (1884).—Burkill in Jour. Linn. Soc. XXVI. 533 (1899).

CHILI: near Tien tsin (ex Debeaux, l. c. [1879] and Burkill, l. c.).

SHANTUNG: near Chifu (ex Debeaux, l. c. [1877] and ex Burkill, l. c.).—See also Franchet, l. c.

In the absence of material from the region the determination of Debeaux' specimens remains doubtful.

Salix amygdalina L. var. **nipponica** Schneider in Sargent, Pl. Wilson. III. 106 (1916).

Salix triandra Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).

Salix triandra var. *nipponica* Seemen in Gilg & Loesener in Bot. Jahrb. XXXIV. beibl. LXXV. 27 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 106 (1919).

SHANTUNG: Tsingtau, Iltis mountain, *O. Nebel* (ex Seemen, l. c. and Loesener, l. c.).—See also Faber, l. c.

DISTRIBUTION: also Japan.

Salix Matsudana Koidzumi in Tokyo Bot. Mag. XXIX. 312 (1915).—Schneider in Sargent, Pl. Wilson. III. 107 (1916).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 27 (1922).

Salix babylonica Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 135 (Enum. Pl. Chin. Bor. 61) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 363 (Fl. Tché-foû, 130) (1877); XXXIII. 64 (Fl. Tien tsin, 41) (1879).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 254 (1884); in Nouv. Arch. Mus. Paris, sér. 2, VII. 92 (Pl. David. I. 282) (1884).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Burkill in Jour. Linn. Soc. XXVI. 526 (1899), quoad specimina cit. e Chili et Shantung.—Seemen in Bot. Jahrb. XXXIV. beibl. LXXV. 27 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 107 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922).—Non Linnaeus.

CHILI: Hsiao wu tai shan, southeastern valley, alt. 900–1500 m., *J. Hers*, no. 2189, October 9, 1922; Tientsin, near race course (also planted everywhere between Tientsin and Peking), *E. H. Wilson*, April, 1909

(male); Peking, *C. S. Sargent*, September 16, 1903 ("large tree with pendulous branches; the common Peking Willow"); Peking-Nankow road *J. H. Jack*, October 6, 1905 ("Common Willow of Peking plain; large tree"); Calceen wong, *W. Purdom*, no. 65, 1909 ("pendulous form;" in fruit); Hsia tien, *F. N. Meyer*, no. 935, May 25, 1913 (in fruit); Kalgan, *N. H. Cowdry*, no. 2156 ("smooth bark"), no. 2157 ("rough bark"), August, 1921; Tsung ling mountains, *N. H. Cowdry*, no. 1337, May 18, 1921; on road to Ku hei kow, *N. H. Cowdry*, no. 1338, May 13, 1921; Ming tombs, *J. Hers*, no. 1596, August 14, 1921.—See also Bunge, l. c., Debeaux, l. c. (1879), Franchet, l. c. (Pl. David.), Burkill, l. c., Schneider, l. c., and Bailey, l. c.

SHANTUNG: Chifu, *N. H. Cowdry*, no. 632, September 1, 1920; near Tsingtau (ex Seemen, l. c. and Loesener, l. c.).—See also Debeaux, l. c. (1877), Franchet, l. c. (Mém. Cherbourg), Burkill, l. c., and Faber, l. c.

HONAN: Cheng chow, *J. Hers*, no. 83, April 20, 1920 ("the common Willow of the plain;" in fruit); Fan lin, Lu shih, alt. 600 m., *J. Hers*, no. 850 (pendulous form); east of Kai fang, cultivated, *J. Hers*, no. 31, May 9, 1919; without precise locality and without no., *J. Hers*, 1919 ("the common Willow of north Honan").—See also Hers, l. c.

KANSU: Ran shiu, *E. Umemura*, No. 17 (type, ex Koidzumi, l. c.).

DISTRIBUTION: also Manchuria, Amur and Ussuri region, Transbaikalia.

This is the common Willow of Chili and northern Honan. The pendulous form of it which apparently takes in these regions the place of *S. babylonica* L. has been distinguished as f. *pendula* Schneider (in Bailey, Gent. Herb. I. 18 [1920]) based on a specimen from a cultivated tree collected at Shanghai. In the collection of photographs of this Arboretum there is a photograph of a beautiful tree of this form at Fan lin, Lu shih, northern Honan, taken by J. Hers (specimens under no. 850) and a photograph taken on the Tchien shan in Manchuria by F. N. Meyer (specimens under no. 54). According to J. Hers, *S. Matsudana* is occasionally cultivated as a basket willow but is inferior to *S. purpurea*.

Salix cupularis (Sect. Sclerophyllae), sp. nov.

Frutex ad videtur parvus erectus ramulis brevibus ab initio glabris; ramuli annotini fusco-purpurei, vetustiores cortice fisso vel secedente flavescente partim flavidi vel flavo-grisei et cicatricibus ramulorum fruciferorum delapsorum nodosi. Folia graciliter petiolata, elliptica vel obovato-elliptica, 1.5–2.5 cm. longa, apice obtusa et apiculata vel acutiuscula, basi late cuneata vel interdum rotundata, integra, supra obscura viridia, subtus glaucescentia, glaberrima, subchartacea, utrinque nervis 6–9 leviter elevatis, venulis vix conspicuis vel obsoletis; petioli graciles, 0.5–1 cm. longi, flavescentes; stipulae minimae, suborbiculares, circiter 5 mm. longae, crassiusculae. Amenta feminea in apice ramulorum brevium 0.5–1 cm. longorum folia plura normalia gerentia, circiter 1 cm. longa et 6–8 mm. crassa (fructibus immaturis); ovaria brevissime pedicellata, elongato-

ovata, apice sensim attenuata, glabra, stylo gracili circiter 1 mm. longo, apice bifido, stigmatibus angustis bifidis stylo multo brevioribus; rhachis inter ovaria sparse villosa; bracteae ovatae vel late obovatae, apice rotundatae, 1–2 mm. longae, extus et margine glabrae vel interdum basin versus pilis paucis longis ciliatae, intus basin versus laxe longeque sericeo-pilosae; glandulae duae, valde variabiles, basi plus minusve connatae et pseudo-discum formantes, ventralis plerumque bifida vel bipartita, vel indivisa et ovato-oblonga, rarius 3-partita, pedicellum ovarii aequans vel paullo superans, dorsalis plerumque oblonga, rarius brevior et quadrangularis vel leviter bifida.

SHENSI: Tai pei shan, alt. 3300 m., *W. Purdom*, no. 547, 1910.

This new species is very distinct and well characterized by its low habit, short thick glabrous branchlets, small slender-petioled elliptic entire and quite glabrous leaves glaucescent beneath, by the ovoid female catkins on short leafy branchlets with glabrous ovaries and glabrous bracts and by the presence of two glands connected at the base into a kind of a disk or cupula surrounding the base of the very short pedicel of the ovary; the ventral gland is usually 2- or sometimes 3-parted, while the dorsal one is undivided. It is apparently most closely related to *Salix oritrepha* Schneider, but easily distinguished by the glabrousness of all its parts.

Mixed with the specimens of the type there is a form with pubescent ovaries but otherwise exactly like the type which may be distinguished as:

Salix cupularis var. **lasiogyne,** var. nov.

At typo recedit ovariis subaccumbenti-villosis pilis rufescenti-cinereis, micantibus.

SHENSI: Tai pei shan, alt. 3300 m., *W. Purdom*, no. 547 (mixta cum typo), 1910.

In its pubescent ovaries this variety resembles *S. oritrepha* Schneider but the branchlets, leaves and bracts are perfectly glabrous as they are in the type, while in *S. oritrepha* all parts of the plant are more or less pubescent at least while young.

Salix spathulifolia Seemen in Bot. Jahrb. XXXVI. beibl. LXXXII. 31 (1905).—Schneider in Sargent, Pl. Wilson. III. 114 (1916).

SHENSI: Huan tou shan, *G. Giraldi*, no. 5359 (type, ex Seemen, l. c.); Tai pei shan, *W. Purdom*, no. 1109, 1910.

Purdom's specimen which is in mature fruit agrees fairly well with the original description, but the leaves are comparatively broader, about 3.5 cm. broad, and oblong, scarcely spatulate.

Salix Biondiana Seemen in Bot. Jahrb. XXXVI. beibl. LXXXII. 32 (1905).—Schneider in Sargent, Pl. Wilson. III. 118 (1916).

SHENSI: Pao ki scen, Miao wang shan, *Hugh Scallan* in Giraldi, no. 5361 (type, ex Seemen, l. c.).

DISTRIBUTION: also Hupeh.

Salix hypoleuca Seemen in Bot. Jahrb. XXXVI. beibl. LXXXII. 31 (1905).—Schneider in Sargent, Pl. Wilson. III. 53 (1916).

SHENSI: In kia pu, Lao y san, *G. Giraldi*, no. 5362 (type, ex Seemen, l. c.); Lao y san, *G. Giraldi*, June 4, 1897.

DISTRIBUTION: also Hupeh, Szechuan.

Salix heterochroma Seemen in Bot. Jahrb. XXI. beibl. LIII. 56 (1896).—Schneider in Sargent, Pl. Wilson. III. 61 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 27 (1922).

HONAN: Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, no. 935, October 10, 1919.—See also Hers, l. c.

DISTRIBUTION: also Hupeh, Szechuan.

As the Honan specimen is sterile it cannot be identified with absolute certainty, but I cannot detect any difference in the leaves and branches of these specimens and those of *S. heterochroma* from Hupeh and from plants cultivated in this Arboretum.

Salix phylicifolia Linnaeus, Spec. 1016 (1753), excl. var. *β*.—Hance in Jour. Bot. XIII. 137 (1875).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 93 (Pl. David. I. 283) (1884).—Burkill in Jour. Linn. Soc. XXVI. 532 (1899).—Schneider in Sargent, Pl. Wilson. III. 123 (1916).—Hers, Liste Ess. Lign. Honan, 27 (1922).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 353 (1922).

CHILI: Hsiao wu tai shan, alt. 2300 m., *F. N. Meyer*, no. 1204, Aug. 12, 1913, no. 1248, August 20, 1913; Hsiao wu tai shan, Tieh ling, alt. 1300 m., *J. Hers*, no. 2139, October 7, 1922; Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, no. 2162, October 8, 1922; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, No. 2086, October 4, 1922.—See also Hance, l. c., Franchet, l. c., Burkill, l. c., and Limpricht, l. c.

HONAN: Lu shih, Liao kiun shan, alt. 2200 m., *J. Hers*, no. 1203, September 21, 1919.—See also Hers, l. c.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1830, October 2, 1921; Lin hsien, Nan yang shan, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2070, September 11, 1922.

DISTRIBUTION: also northeastern Asia to Caucasus and Europe.

All the specimens quoted are sterile and their identification is therefore open to doubt, as is the identification of all specimens from northeastern Asia with *S. phylicifolia* L. which may be restricted to Europe and western Asia.

Salix characta Schneider in Sargent, Pl. Wilson. III. 125 (1916).

CHILI: Hsiao wu tai shan, mountain slopes, alt. 1700–3000 m., *F. N. Meyer*, no. 1160 (type), August 8, 1913.—See also Schneider, l. c.

Salix Baileyi Schneider in Bailey, Gent. Herb. I. 16, fig. 3 a, b, 1920.

HONAN: Chi kung shan, alt. 500–800 m., *L. H. Bailey*, June 16, 1917 (type).—See also Schneider, l. c.

Salix Caprea Linnaeus, Spec. 1020 (1753), excl. var. γ et δ.—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 93 (Pl. David. I. 283) (1884).—Burkill in Jour. Linn. Soc. XXVI. 527 (1899).—Seemen in Bot. Jahrb. XXIX. 277 (1900).—Schneider in Sargent, Pl. Wilson. III. 149 (1916).

CHILI: Hsiao wu tai shan, well-wooded mountain slopes, alt. 1600–2600 m., *F. N. Meyer*, no. 1248, August 20, 1903; Weichang, *W. Purdom*, no. 79, 1909.—See also Schneider, l. c.

SHENSI: Tsin ling, *A. David* (ex Franchet, l. c., Burkill, l. c., Seemen, l. c., Schneider, l. c.); Kiu lin shan, *G. Giraldi*, no. 1160 (ex Seemen, l. c., Schneider, l. c.).

DISTRIBUTION: also Japan and northeastern Asia to Europe.

Both specimens cited from Chili are sterile and their identification will remain doubtful until more complete material from eastern Asia is available.

? **Salix Caprea × phylicifolia** Burkill in Jour. Linn. Soc. XXVI. 527 (1899).

CHILI: Jehol, *A. David*, no. 1690 (in herb. Paris, ex Burkill, l. c.).

Salix Wallichiana Andersson in Svensk. Vetensk. Akad. Handl. 1850, 477 (1851).—Schneider in Sargent, Pl. Wilson. III. 64 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922); Liste Ess. Lign. Honan, 28 (1922).

Salix Wallichiana var. *grisea* Andersson in Svensk. Vetensk. Akad. Handl. VI. 80 (Monog. Salic.) (1867).—Seemen in Bot. Jahrb. XXIX. 277 (1900).

CHILI: Po hua shan, *J. Hers*, no. 1677, September 9, 1921.

HONAN: Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, no. 918, October 10, 1919; Lu shih, Kiao ho, alt. 1000 m., *J. Hers*, no. 978, October 13, 1919; Lushih, Tung ho, alt. 1000 m., *J. Hers*, no 990, October 14, 1919; Lu shih, Lao kiun shan, alt. 900 m., *J. Hers*, no. 1190, September 21, 1919; no. 1237, September 23, 1919; Yung ning, Chuan pao shan, alt. 1500 m., *J. Hers*, no. 1120, October 7, 1919; Yung ning, Tsi li ping, alt. 1000 m., *J. Hers*, no. 1367, September 30, 1919; Sung hsien, San kuan miao, alt. 1000 m., *J. Hers*, nos. 516, 560, May 24, 1919, and no. 1309, September 27, 1919; Teng feng hsien, Yu tai shan, alt. 1500 m., *J. Hers*, no. 218, April 23, 1919 (flowers) and no. 316, April 20, 1920 (in fruit).—See also Hers, l. c.

SHENSI: Tsin ling shan, *A. David* (ex Seemen, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Kweichou, Yunnan, northwestern Himalayas and eastern Afghanistan.

This is a very variable species, the leaves varying from tomentose on their under side to nearly glabrous, but the majority of the specimens cited above have leaves more or less tomentose below, except no. 1190 from Lao kuan shan which is only slightly pubescent on the midrib beneath. *Salix Wallichiana* is apparently closely related to *S. Caprea* and I am

not at all sure whether all the specimens cited above belong to this species or partly to *S. Caprea* or some other closely related species. Unfortunately all the specimens except nos. 218 and 316 are sterile.

Salix Wallichiana Anderss. var. ?

CHILI: Hsiao wu tai shan, *J. Hers*, no. 1497, July 14, 1921 and no. 1568, July 16, 1921; Po hua shan, *J. Hers*, nos. 1402 and 1405 (both in flower), May 1, 1921; no. 1444, July 1, 1921; without precise locality, *Père Chanet*, nos. 16, 45 (in fruit), 54, 1918.

HONAN: Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, no. 886, October 10, 1919; Tsi yuán hsien, Tien tan shan, *J. Hers*, no. 1698, September 16, 1921.

The specimens cited represent apparently a form of *S. Wallichiana* with smaller glabrescent or glabrous leaves mostly elliptic-oblong and rarely more than 8 cm. long, and with smaller and slenderer fruiting catkins. They have some resemblance to *S. Starkeana* Willdenow but that species has smaller and comparatively broader leaves distinctly reticulate beneath and borne on very short petioles; it has, too, smaller catkins with long-villose paler bracts.

Salix viminalis Linnaeus, Spec. 1021 (1753).—Schneider in Sargent' Pl. Wilson. III. 157 (1916).

CHILI: Hsiao wu tai shan, *J. Hers*, no. 1493, July 14, 1921; Huai lai hsien, Yang kia ping, *J. Hers*, no. 2113, October 4, 1922.

DISTRIBUTION: also northeastern Asia to Europe, and in the Punjab and Kashmir.

This species has not yet been recorded from China, but although the specimen is sterile, I have little doubt that it belongs to *S. viminalis*, as it agrees perfectly in the shape and pubescence of the leaves with European specimens of that species.

Salix purpurea Linnaeus, Spec. 1017 (1753).—Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 111 (Fl. Tché-foû, 16) (1877).—Franchet in Mém. Soc. Nat. Cherbourg, XXIV. 255 (1884).—Burkill in Jour. Linn. Soc. XXVI. 532 (1899).

Salix purpurea var. v. forma Loesener in Beih. Bot. Centralbl. XXXVIII. abt. II. 107 (1919).

SHANTUNG: near Chifu (ex Debeaux, l. c., Franchet, l. c. and Burkill, l. c.).—See also Loesener, l. c.

DISTRIBUTION: also Siberia and central Asia to Europe.

Salix purpurea L. var. **stipularis** Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 91 (Pl. David. I. 284) (1884).—Schneider in Sargent, Pl. Wilson. III. 168 (1916).

Salix purpurea var. *multinervis* Hers in Jour. N. China Branch R. As. Soc. LIII. 115 (1922).

Salix purpurea var. Hers, l. c. 115 (1922); Liste Ess. Lign. Honan, 28 (1922).

CHILI: near Yu tien hsien, cultivated and wild, *F. N. Meyer*, no. 941, May 26, 1913; Po hua shan, *J. Hers*, no. 1648, September 9, 1921 (doubtful).

HONAN: Cultivated on the sandy marshy plain east of Kai feng, *J. Hers*, no. 30, May 9, 1919.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2026, September 7, 1922.

DISTRIBUTION: also Mongolia.

I am not sure if the specimens cited above are really refereable to Franchet's variety, as his description is rather incomplete. The leaves are attenuate, 10–15 cm. long and 1–1.5 cm. wide, short-petioled, cuneate at the base, abruptly acute at the apex, serrulate, rather remotely so toward the base, and glabrous; the stipules are well-developed, lanceolate or oblong-lanceolate and longer than the petioles in the specimens from Chili and Honan. This Willow is according to Hers extensively cultivated near Kai feng and is apparently the chief basket Willow of northern China.

There is a specimen from Po hua shan, Chili, collected by J. Hers under no. 1648, consisting only of vigorous sterile shoots which may represent a form of *S. purpurea;* the leaves are nearly as long as those of the var. *stipularis* but up to 3 cm. broad, and the stipules are small and semicordate.

Salix cheilophila Schneider in Sargent, Pl. Wilson. III. 69 (1916).

CHILI: Po hua shan, *J. Hers*, no. 1459, July 1, 1921; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, no. 2085, October 4, 1922.

HONAN: Lu shih, Kiao ho, very common, alt. 1000 m., *J. Hers*, no. 963, October 12, 1919 (up to 4 m. tall); Hwei hsien, Shansi border, *J. Hers*, No. 712, June 19, 1919.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2023, September 7, 1922.

DISTRIBUTION: also Szechuan.

As far as can be judged from the sterile specimens cited above, they are identical with *S. cheilophila* from western Szechuan, though it is possible that they represent a silky-pubescent form of *S. purpurea* L. different from var. *sericea* Koch.

Salix melea Schneider in Sargent, Pl. Wilson. III. 176 (1916).

NORTHERN CHINA: without locality, *W. Purdom*, 1909–1911 (type).—See also Schneider, l. c.

Salix spec.

CHILI: Hsiao wu tai shan, Tieh ling, alt. 1300 m., *J. Hers*, no. 2120, October 7, 1922.

A sterile branch with short-petioled oblong-lanceolate leaves 8–9 cm. long, strongly glandular-dentate, glabrous, glaucescent beneath.

Salix spec.

SHENSI: Tai pei shan, *W. Purdom*, no. 979, 1910.

HONAN: Hwei hsien, Shansi border, *J. Hers*, no. 705, June 19, 1919.

In its leaves and the slender short-peduncled fruiting catkins with sessile fruits, Purdom's specimen very much resembles *S. rhoophila* Schneid. and *S. polyclona* Schneid. from Hupeh, but the capsules are pubescent, the style is short as in *S. polyclona*. Hers' specimen which is sterile differs only slightly in its leaves.

Another *Salix spec.*, possibly a new species from the Wu tai shan, Shansi, is mentioned by Limpricht (Bot. Reis. Hochgeb. China Ost-Tib. 354 [1922]).

JUGLANDACEAE

Platycarya strobilacea Siebold & Zuccarini in Abh. Akad. Muench. III. 742, t. 5, fig. 1 (1843).—Pritzel in Bot. Jahrb. XXIX. 273 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. III. 180 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 21 (1922).

HONAN: Yung ning, Tsi li ping, *J. Hers*, no. 465, May 22, 1919; Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, no. 1149, September 21, 1919.—See also Hers, l. c.

SHENSI: Lun san huo, *G. Giraldi*, nos. 1268, 1520 (ex Pritzel, l. c.).

DISTRIBUTION: also Kiangsu, Chekiang, Kiangsi, Kwangtung, Hupeh, Yunnan; Korea, Japan.

Pterocarya stenoptera C. De Candolle in Ann. Sci. Nat. sér. 4, XVIII. 34 (1862).—Skan in Jour. Linn. Soc. XXVI. 494 (1899).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 28 (1904).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).—Rehder & Wilson in Sargent, Pl. Wilson. III. 181 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922).

Pterocarya stenoptera var. *typica* Franchet in Jour. de Bot. XII. 317 (1898).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 107 (1919).

SHANTUNG: Lau shan, *O. Nebel* (ex Gilg, l. c.).

SHENSI: *J. P. Piasezki* (ex Skan, l. c.); Hua tzo pin, *G. Giraldi*, no. 3865 (ex Diels, l. c.).

KANSU: *J. G. Piasezki* (ex Skan, l. c.).

DISTRIBUTION: from northern China south to Kwangtung and Tonkin, west to Yunnan and Szechuan.

The enumeration of this species by Hers (l. c.) among the Honan plants is probably a mistake and refers to his no. 1018 from Kiangsu.

Pterocarya stenoptera *β.* **kouitchensis** Franchet in Jour. de Bot. XII. 318 (1898).—Loesener in Beih. Bot. Centralbl. XXXVII, abt. II. 107 (1919).

SHANTUNG: Tsingtau (ex Loesener, l. c.).

DISTRIBUTION: also Kweichou.

Pterocarya hupehensis Skan in Jour. Linn. Soc. XXVI. 493 (1899).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).—Rehder & Wilson

in Pl. Wilson. III. 182 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII, 144 (1922); Liste Ess. Lign. Honan, 23 (1922).

?*Pterocarya Paliurus* Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); non Batalin.

HONAN: Yung ning, Chuan pao shan, alt. 1500 m., *J. Hers*, no. 1121, October 17, 1919; Lu shih, Tang ho, *J. Hers*, no. 956, October 11, 1919.—See also Hers, l. c.

SHENSI: Lao y shan, *G. Giraldi* (ex Diels, l. c.).

DISTRIBUTION: also Hupeh, Szechuan.

Mr. Hers' no. 956 is from an enormous tree, the trunk measuring 4 m. in girth, and dividing at the height of 3 m. into many strong branches covering a radius of 30 m.

Pterocarya macroptera Batalin in Act. Hort. Petrop. XIII. 100 (1893).—Skan in Jour. Linn. Soc. XXVI. 494 (1899).

KANSU: Id shu shan, *G. N. Potanin* (ex Batalin, l. c., and Skan, l. c.).

Pterocarya rhoifolia Siebold & Zuccarini in Abh. Akad. Muench. IV. pt. 2, 141 (1846).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 28 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 107 (1919).

SHANTUNG: see Faber, l. c., ex Gilg, l. c. and Loesener, l. c.

DISTRIBUTION: Japan.

This species is otherwise not known from China and its occurrence in Shantung is very doubtful. There are no specimens of Faber's of this species in the Berlin Herbarium.

Juglans regia Linnaeus, Spec. 997 (1753).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 136 (Enum. Pl. Chin. Bor. 62) (1833).—Hance in Jour. Bot. XIII. 135 (1875).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 254 (1884).—Skan in Jour. Linn. Soc. XXVI. 493 (1899).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 28 (1904).—Rehder & Wilson in Sargent, Pl. Wilson. III. 184 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 107 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 111 (1922).

Juglans regia var. *sinensis* C. De Candolle in Ann. Sci. Nat sér. 4, XVIII. 33, t. 4, fig. 38, 39 (1862).—Maximowicz in Bull. Acad. Sci. St. Pétersb. sér. 3, XVIII. 57 (1873); in Mél. Biol. VIII. 630 (1873).—Debeaux in Act. Soc. Linn. Bordeaux, XXXIII. 63 (Fl. Tien-tsin, 40) (1879).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Skan in Jour. Linn. Soc. XXVI. 493 (1899).—Hers, Liste Ess. Lign. Honan, 16 (1922).

CHILI: Ming tombs, north of Peking, *J. G. Jack*, October 6, 1905; Kalgan road, hills near Great Wall, *J. G. Jack*, October 5, 1905; near Changli, *F. N. Meyer*, no. 198, October, 1905.—See also Bunge, l. c., Maximowicz, l. c., Skan, l. c., Rehder & Wilson, l. c.

SHANTUNG: Lau shan, *O. Nebel* (ex Gilg, l. c. and Loesener, l. c.).—See also Franchet, l. c. and Faber, l. c.

HONAN: See Hers, l. c.

DISTRIBUTION: western Asia, extensively cultivated in Europe and Asia.

In China the fruit of this species is as variable as it is in Europe; it varies in its shape from subglobose to oblong-ovoid and in size from 2 cm. to more than 4 cm. long and it also varies in the thickness of the shell.

Juglans mandschurica Maximowicz in Bull. Phys.-Math. Acad. St. Pétersb. XV. 127 (1856).—Hance in Jour. Bot. XIII. 135 (1875).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 92 (Pl. David. I. 282) (1884).—Skan in Jour. Linn. Soc. XXVI. 493 (1899).

Juglans sp. Hers in Jour. N. China Branch R. As. Soc. LIII. 111 (1922).

CHILI: Huai lai shan, Yang kia ping, alt. 900 m., J. Hers, no. 2101, Oct. 4, 1922; Po hua shan, *J. Hers*, no. 1391, May 1, 1921; Nankow Pass, *J. Hers*, no. 1608, August 15, 1921; Weichang, *W. Purdom*, no. 90, 1909; Hsiao wu tai shan, *F. H. Meyer*, no. 1308, August 23, 1913; same locality, *J. Hers*, no. 1548, July 14, 1921; Peking, western hills, *J. Hers*, no. 2250, October 14, 1922.—See Franchet, l. c., Skan, l. c.

HONAN: Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1711, September 20, 1921; Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, no. 892, October 10, 1919.

DISTRIBUTION: also Manchuria, Korea.

I have seen no fruits of typical *J. mandshurica* from northern China. Fruits from near Nankow Pass purchased by Hers and sent under No. 2467 are apparently intermediate between those of *J. mandshurica* and *J. Sieboldiana;* they are small, between 2 and 3 cm. long, and globose-ovoid to ovoid, some of them are nearly smooth, almost like those of *J. Sieboldiana*, while some are distinctly ribbed and deeply pitted with ragged edges like those of *J. mandshurica*, but most are intermediate between the two extremes. Under no. 2250 Mr. Hers sent leaf specimens and fruits from northwestern Chili; the leaves agree exactly with those of *J. mandshurica*, but the fruits are large, globose-ovoid to oblong-ovoid, up to 4 cm. long, with irregular and often indistinct longitudinal ridges and are deeply and irregularly pitted with rounded smooth edges. Nuts purchased in Peking and sent under no. 2254 are similar; Mr. Hers states that they are called "mahe tao" (horse nuts), take a fine polish and are used as trinkets. Nuts received about 1880 from Dr. Bretschneider as *J. manshurica* are also similar but much less distinctly ridged and pitted. Under no. 2101 Mr. Hers has sent leaf specimens and also fruits which are very much like small nuts of *J. Sieboldiana* but these were, according to his note, only those left on the ground after all the big nuts had been gathered by the natives. Possibly *J. mandshurica* and *J. Sieboldiana* Maxim. are only forms of one species exceedingly variable in its fruit. Certainly except in the configuration of the shell of the nut no characters have been discovered to distinguish *J. mandshurica* and *J. Sieboldiana*.

BETULACEAE

Ostryopsis Davidiana Decaisne in Bull. Soc. Bot. France, xx. 155 (1873).—Hance in Jour. Bot. xiii. 137 (1875).—Maximowicz in Mél. Biol. xi. 316 (1881); in Bull. Acad. Sci. St. Pétersb. xxvii. 535 (1882).—Palibin in Act. Hort. Petrop. xiv. 140 (1895).—Burkill in Jour. Linn. Soc. xxvi. 502 (1899).—Winkler in Engler, Pflanzenr. iv–61, 20, fig. 5 (1904).—Schneider in Sargent, Pl. Wilson. ii. 423 (1916).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. xxxvii. 58, no. 36731 (1916).—Hers in Jour. N. China Branch R. As. Soc. liii. 112 (1922); Liste Ess. Lign. Honan, 20 (1922).

Corylus Davidiana Baillon, Hist. Pl. vi. 224, fig. 174 (1877).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, vii. 88 (Pl. David. i. 278) (1884).

Chili: Weichang, alt. 4500 ft., *W. Purdom*, no. 3 (1909); Calceen wong, *W. Purdom*, no. 69, 1910; Kalgan, *N. H. Cowdry*, no. 1379, June 2, 1921; Po hua shan, *J. Hers*, no. 1450, July 1, 1921; Hsiao wu tai shan, *F. N. Meyer*, no. 1125, August 8, 1913; *N. H. Cowdry*, no. 1660, July 13, 1921; Hsiao wu tai shan, Tieh ling, alt. 1300 m. *J. Hers*, no. 2143, October 7, 1922.—See also Decaisne, l. c., Hance, l. c., Maximowicz, l. c., Franchet, l. c., Palibin, l. c., Burkill, l. c., Winkler, l. c., Schneider, l. c., and Meyer, l. c.

Honan: Hwei hsien, Shansi border, *J. Hers*, no. 703, June 19, 1919.—See also Hers, l. c.

Shansi: Wu chai hsien, Ta nan kow, 2000–3000 m., *Tchuang Kieh*, Hers no. 2006, September 7, 1922.

Shensi: Yenan fu district, *W. Purdom*, no. 384, 1910.—See also Winkler, l. c.

Kansu: Near Lau tschen, valley of Hoangho, *P. J. Piasezki* (ex Maximowicz, l. c., and Burkill, l. c.).

Distribution: also northwestern Szechuan.

Carpinus cordata Blume, Mus. Bot. Lugd.-Bat. i. 309 (1850).—Burkill in Jour. Linn. Soc. xxvi. 501 (1899).—Diels in Bot. Jahrb. xxix. 279 (1900).—Schneider in Sargent, Pl. Wilson. ii. 435 (1916).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 354 (1922).

Carpinus cordata var. *sinensis* Hers in Jour. N. China Branch R. As. Soc. liii. 107 (1922); Liste Ess. Lign. Honan, 6 (1922); non var. *chinensis* Franchet.

Chili: Jehol, *W. Limpricht* (ex Limpricht, l. c.)

Honan: Sung hsien, Sih tze miao, *J. Hers*, no. 567, May 26, 1919; Sung hsien, San kuan miao, *J. Hers*, no. 553, May 24, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1788, Sept. 21, 1919; Lao kiun shan, alt. 1500–2000 m., *J. Hers*, no. 1174, Sept. 21, 1919; Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, no. 907, October 10, 1919. See also Hers, l. c.

Shensi: Kin tu san, *G. Giraldi*, July 14, 1897; Kuan yen tang, *F. N. Meyer*, no. 1921, Sept. 15, 1914; Lung chow, Sien fo shan, alt. 1000 m., *J. Hers*, no. 2322, July 2, 1922.—See also Burkill, l. c., Diels, l. c., and Schneider, l. c.

DISTRIBUTION: also Hupeh, Manchuria, Japan.

Carpinus cordata var. *chinensis* Franch. does not seem to occur in northern China, but it is common in Hupeh.

Carpinus Turczaninovii Hance in Jour. Linn. Soc. x. 203 (1869).—Maximowicz in Mél. Biol. xi. 315 (1881); in Bull. Acad. Sci. St. Pétersb. xxvii. 535 (1882).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, xxiv. 254 (1884); in Nouv. Arch. Mus. Paris, sér. 2, vii. 88 (Pl. David. i. 278) (1884).—Burkill in Jour. Linn. Soc. xxvi. 502 (1899).—Diels in Bot. Jahrb. xxix. 279 (1900).—Schneider in Sargent, Pl. Wilson. ii. 439 (1916).

Carpinus spec. Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. ix. 477 (Ind. Fl. Pekin.) (1859).

Carpinus stipulata Winkler in Engler, Pflanzenr. iv.-61, 35, fig. 11 (1904).

? *Carpinus spec.* Bailey, Gent. Herb. i. 18 (1920).

CHILI: Ta miao, *J. Hers*, no. 2210, October 10, 1922; Peking, western hills, alt. 700 m., *J. Hers*, no. 2224, October 11, 1922; near Peking, *S. W. Williams* (ex Schneider, l. c.); Po hua shan, *J. Hers*, no. 1657, September 9, 1921 (sterile); Tung ling hills north of wall, *N. H. Cowdry*, no. 1318, May 18, 1921; Tung ling, Pan shan, *N. H. Cowdry*, no. 1317, May 16, 1921; without locality, *Pére Chanet* (sterile).—See also Hance, l. c., Maximowicz, l. c., Franchet, l. c. (Pl. David.), Burkill, l. c., Schneider, l. c.

SHANTUNG: Po shan, on rocky mountain sides, *F. N. Meyer*, no. 258, September 19, 1907.—See also Franchet, l. c. (Mém. Cherbourg), Burkill, l. c. and Schneider, l. c.

HONAN: Tsi yuan hsien, Tien tan shan, *J. Hers*, nos. 1695, 1885, 1886, September 16 and 21, 1921; Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, No. 1258, September 25, 1919; Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, September 21, 1919; alt. 900 m., *J. Hers*, no. 1238, September 23, 1919; Yung ning, Tsi li ping, *J. Hers*, nos. 1350 and 1329 (sterile), September 30, 1919; Hwei hsien, Shansi border, *J. Hers*, no. 799 and 757 (sterile), June 19, 1919; Ho dien, alt. 2500 -t., *F. N. Meyer*, no. 1861, July 7, 1914; Chi king shan, *L. H. Bailey*, July 30, 1917 (sterile, doubtful).

SHANSI: Hsi po po, *F. N. Meyer*, no. 1654, July 10, 1914 (Herb. U. S. Dept. Agric.).

SHENSI: Tai pei shan, *W. Purdom*, no. 994, 1910; without locality, *G. Giraldi*.—See also Burkill, l. c., Diels, l. c., Winkler, l. c., and Schneider, l. c.

DISTRIBUTION: also Korea, Manchuria.

Some of the sterile material is doubtful. Hers' no. 1329 is represented by a vigorous shoot with rather large pubescent leaves densely pubescent petioles and branchlets which might be taken for *C. Tschonoskii* Maxim., but its leaves lack the acuminulate teeth of that species; Bailey's specimens from Chi kung shan has the larger and narrower leaves of *C. Fargesiana* Winkl. and may be referable to that species.

Carpinus Turczaninovii var. **ovalifolia** Winkler in Bot. Jahrb. L. Suppl. 505 (1914).—Schneider in Sargent, Pl. Wilson. ii. 427 (1916).—Hers in

Jour. N. China Branch, R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 6 (1922).

HONAN: Sung hsien, San kuan miao, alt. 1200 m., *J. Hers*, nos. 508, 518, May 24, 1919.—See also Hers, l. c.

KANSU: Lotani road from Min chou, alt. 2600 m., *W. Purdom*, 1910; Chi shan near Cheng hsien, *F. N. Meyer*, no. 1763, October 1, 1914.—See also Schneider, l. c.

DISTRIBUTION: also Szechuan, Yunnan (*Handel-Mazzetti*, No. 10222, sterile).

This variety differs little from the type except in the dentate, not lobulate, fruiting bracts, and sterile specimens cannot be determined with certainty, although I refer Meyer's no. 1763 which represents a form with the leaves pubescent on both sides and Handel-Mazzetti's no. 10222 to] the variety for geographical reasons.

Carpinus Fargesiana Winkler in Bot. Jahrb. L. suppl. 506, fig. 6 (1914).—Schneider in Sargent Pl. Wilson. II. 428 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 6 (1922).

HONAN: Mien chih, alt. 800 m., *J. Hers*, no. 79, Nov. 1, 1919; Lu shih, Tang ho, alt. 1000 m., *J. Hers*, no. 945, October 11, 1919; Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, nos. 1270 and 1276 (sterile), September 25, 1919.—See also Hers, l. c.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1871, October 2, 1921; Hia hsien, Low shan, *J. Hers*, no. 1878, October 3, 1921.

KANSU: near Yan fu ko, *F. N. Meyer*, no. 1967, October 6, 1914.

DISTRIBUTION: also Chekiang (*F. N. Meyer*, no. 1542), Szechuan, Kweichou (*Handel-Mazzetti*, no. 10549).

F. N. Meyer's no. 1542 (sterile), from near Chang hua, Chekiang, referred by Schneider (l. c. 441) to *C. Tschonoskii* Maxim., probably belongs here.

Ostrya japonica Sargent in Gard. & Forest, VI. 383, fig. 58 (1893).—Schneider in Sargent, Pl. Wilson, II. 424 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 112 (1922); Liste Ess. Lign. Honan, 6 (1922).

HONAN: Lu shih, Lao kiun shan, *J. Hers*, no. 1141, September 21, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1807, September 21, 1921.—See also Hers, l. c.

DISTRIBUTION: also Hupeh, Szechuan; Korea, Japan.

Corylus tibetica Batalin in Act. Hort. Petrop. XIII. 102 (1893).—Schneider in Sargent, Pl. Wilson. II. 443 (1916);—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLII. 36, no. 39909 (1918).

Corylus ferox var. *tibetica* Franchet in Jour. de Bot. XIII. 200 (1899).—Burkill in Jour. Linn. Soc. XXVI. 503 (1899).—Diels in Bot. Jahrb. XXIX. 281 (1900).

SHENSI: Tai pei shan, *W. Purdom*, no. 457, 1910.—See also Burkill, l. c.

KANSU: near Pao dji, *F. N. Meyer*, nos. 1819, 2004, November 7, 1914 (Herb. U. S. Dept. Agric.); valley of the river Tshagon, *G. N. Potanin* (ex Batalin, l. c., Burkill, l. c., and Schneider, l. c.).—See also Meyer, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan.

Corylus chinensis Franchet in Jour. de Bot. XIII. 197 (1899).—Meyer in U. S. Dept. of Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLII. 36, no. 39907 (1918).

KANSU: near Kagoba, *F. N. Meyer*, no. 1992, October 30, 1914 (Herb. U. S. Dept. Agric.).—See also Meyer, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan.

According to Meyer's rather fragmentary specimen his determination is correct, but there are no other records of this species as occurring in Kansu or elsewhere in northern China.

Corylus heterophylla Fischer in Schtscheglof, Anz. Entdeck. Phys. Chem. & Techn. VIII. 3 (1831).—Maximowicz in Mél. Biol. XI. 317 (1881); in Bull. Acad. Sci. St. Pétersb. XXVII. 537 (1882).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 88 (Pl. David. I. 278) (1884).—Burkill in Jour. Linn. Soc. XXVI. 504 (1899).—Schneider in Sargent, Pl. Wilson. II. 450 (1916).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 354 (1922).

Corylus sp. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XXXVII. 57, no. 36726 (1916).

CHILI: near San tung ying, *F. N. Meyer*, no. 989, June 2, 1913; Weichang, *W. Purdom*, nos. 33, 92, 1909, 1910; east of Weichang, *W. Purdom*, no. 1120, 1909; Hsiao wu tai shan, *F. N. Meyer*, no. 1056, August 19, 1913; same locality, *J. Hers*, nos. 1479, 1481, 1491, July 14, 1921; Hsiao wu tai shan, Tieh ling, alt. 1300 m., *J. Hers*, no. 2129, October 7, 1922; Po hua shan, *J. Hers*, no. 1681, September 9, 1921 (sterile); Peking, western hills, alt. 700 m., *J. Hers*, no. 2221, October 11, 1922 (sterile).—See also Maximowicz, l. c., Franchet, l. c., Burkill, l. c., Schneider, l. c., Meyer, l. c., and Limpricht, l. c.

DISTRIBUTION: also Manchuria, Korea, Japan.

Corylus heterophylla var. **sutchuenensis** Franchet in Jour. de Bot. XIII. 199 (1899).—Schneider in Sargent, Pl. Wilson. II. 445 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 109 (1922); Liste Ess. Lign. Honan, 9 (1922).

Corylus heterophylla Maximowicz in Mél. Biol. XI. 317 (1881); in Bull. Acad. Sci. St. Pétersb. XXVII. 537 (1882), in part.—Burkill in Jour. Linn. Soc. XXVI. 504 (1899), pro parte.—Diels in Bot. Jahrb. XXIX. 280 (1900).

HONAN: Leng shui, Lu shih, *J. Hers*, no. 120, October 4, 1919; Yung ning, Tsi li ping, *J. Hers*, no. 453, May 22, 1919; Sung hsien, Shih tze miao, *J. Hers*, no. 600, May 26, 1919; Hwei hsien, Shansi border, *J. Hers*, no. 761, June 19, 1919.—See also Hers, l. c.

SHENSI: Kin qua san, *G. Giraldi*, July 10, 1897; Tai pei shan, *W. Purdom*, no. 998, 1910; Kwan yin tang, *F. N. Meyer*, no. 2015, September 15, 1914; Pai hsi pa, *F. N. Meyer*, no. 1938, September 18, 1914 (Herb. U. S. Dept. Agric.).—See also Burkill, l. c., Diels, l. c., Schneider, l. c.

KANSU: Dshoni River, *G. N. Potanin* (ex Burkill, l. c.); Lan tschan south of the Hoangho, *P. J. Piasezki* (ex Maximowicz, l. c. and ex Burkill, l. c.)

DISTRIBUTION: also Kiangsu (*Hers*, nos. 652, 2278), Hupeh, Szechuan, Kweichou (*Handel-Mazzetti*, no. 10331), Hunan, Kiangsi.

Burkill refers the specimen from Shensi and Kansu to the typical form, but as the Shensi specimens I have seen belong to this variety I assume that the range of typical *C. heterophylla* does not extend much beyond Chili and that in western China it is replaced by var. *sutchuenensis*.

Corylus Sieboldiana var. **mandshurica** Schneider in Sargent, Pl. Wilson. II. 454 (1916).

Corylus mandshurica Maximowicz & Ruprecht in Bull. Acad. Sci. St. Pétersb. XV. 137 (1856); in Mél. Biol. II. 431 (1857).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Burkill in Jour. Linn. Soc. XXVI. 505 (1899).

Corylus rostrata var. *mandshurica* Regel in Bull. Acad. Sci. St. Pétersb. XV. 221 (1857); in Mél. Biol. II. 488 (1857).—Hance in Jour. Linn. Soc. XIII. 87 (1872); in Jour. Bot. XIII. 137 (1875).—Maximowicz in Mél. Biol. XI. 319 (1881); in Bull. Acad. Sci. St. Pétersb. XXVII. 539 (1882).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 88 (Pl. David. I. 278) (1884).

Corylus sp. Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XXXVII. 57, no. 36727 (1916).

Corylus rostrata Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 354 (1922); non Aiton.

CHILI: Po hua shan, *J. Hers*, nos. 1399 (sterile), 1435, May 1 and July 1, 1921; Hsiao wu tai shan, alt. 1600–2700 m., *F. N. Meyer*, no. 1227, August 18, 1913; Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, no. 2157, October 8, 1922; without locality, *Père Chanet*, no. 66.—See also Maximowicz, l. c., Hance, l. c., Franchet, l. c., Schneider, l. c., Meyer, l. c., and Limpricht, l. c.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2011, September 7, 1922.

SHENSI: Lung chow, Li kia po, alt. 1400 m., *J. Hers*, no. 2389, July 4, 1922 (sterile).

DISTRIBUTION: also northwestern Szechuan; Manchuria, Korea, Japan. As the Shensi specimen is sterile, I am not absolutely certain if it belongs here or perhaps to the preceding species.

To one of the two preceding species belong probably also sterile specimens of *Corylus spec.* collected in Shantung on the Lau shan (see Loesener, Beih. Bot. Centralbl. XXXVII. abt. II. 107 [1919]).

Betula albo-sinensis Burkill in Jour. Linn. Soc. XXVI. 497 (1899).—Schneider in Sargent, Pl. Wilson. II. 457 (1916).

Betula Bhojpattra Bretschneider, Hist. Eur. Bot. Disc. China, 987 (1898), non Wallich.

? *Betula rosea* David Jour. Trois. Voy. Chin. I. 192 (1875), "Betulus."—Bretschneider, l. c., 850 (1898).

Betula utilis Burkill in Jour. Linn. Soc. XXVI. 409 (1899).

Betula luminifera Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 5 (1922); non Winkler.

HONAN: Lu shih, Lao kium shan, *J. Hers*, no. 1188, September 21, 1919.—See also Hers, l. c.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers, no. 2042, September 7, 1922.

SHENSI: Tai pei shan, *W. Purdom*, nos. 400 (bark), 437, 995, 996, 1910.—See also Schneider, l. c.

KANSU: Tibetan country, *W. Purdom*, no. 1049, 1911; near Kagoba, *F. N. Meyer*, no. 1988, October 20, 1914 (bark; Herb. U. S. Dept. Agric.); near Pao dji, *F. N. Meyer*, November 7, 1914 (bark; Herb. U. S. Dept. Agric.).—See also Bretschneider, l. c., Burkill, l. c., and Schneider, l. c.

DISTRIBUTION: also Hupeh, Szechuan.

Betula albo-sinensis var. **septentrionalis** Schneider in Sargent, Pl. Wilson. II. 458 (1916).

? *Betula utilis* Winkler in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).

KANSU: Tow River district, *W. Purdom*, no. 752, 1911.—See also Schneider, l. c.

SHENSI: Tai pa shan, *G. Giraldi* (ex Winkler, l. c. and Schneider, l. c.).

DISTRIBUTION: also Szechuan.

Betula Delavayi Franchet in Jour. de Bot. XIII. 205 (1899).—Schneider in Sargent, Pl. Wilson. II. 460 (1916).

KANSU: Min chou, Lotani, alt. 1900 m., *W. Purdom*, no. 812, 1911.—See also Schneider, l. c.

DISTRIBUTION: also Szechuan, Yunnan.

Betula chinensis Maximowicz in Bull. Soc. Nat. Moscou, LIV. pt. I, 47 (1879).—Burkill in Jour. Linn. Soc. XXVI. 498 (1899).—Schneider in Sargent, Pl. Wilson. II. 479 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 5 (1922).

Betula chinensis var. *angusticarpa* Winkler in Engler, Pflanzenr. IV. 61, 67, fig. 19 k–l (1904).

CHILI: Weichang, *W. Purdom*, no. 85, 1910; Tsing shui tsien, *J. Hers*, no. 1623, September 6, 1921; Po hua shan, *J. Hers*, no. 1443, July 1, 1921; Hsiao wu tai shan, *J. Hers*, no. 1494, July 14, 1921; Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, no. 2156, October 8, 1922; without locality, *Père Chanet*, no. 82, 1918.—See also Maximowicz, l. c., Burkill, l. c., Winkler, l. c., Schneider, l. c.

HONAN: Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, no. 1195, September 21, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1768, September 21, 1921.—See also Hers, l. c.

DISTRIBUTION: also Manchuria, Korea.

Betula fruticosa Pallas, Reise, III. App. 758, t. Kk, fig. 1–3 (1776).—Schneider in Sargent, Pl. Wilson. II. 482 (1916).

CHILI: central and west Wei chang, *W. Purdom*, nos. 104, 8a (staminate flowers), 1910.—See also Schneider, l. c.

DISTRIBUTION: also Korea, Manchuria, Transbaikalia, Altai Mts.

Betula davurica Pallas, Reise, III. 422, note, 321, 421, Kk, fig. 4a–b (1776).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859); in Bull. Soc. Nat. Moscou, LIV. pt. 1, 47 (1879).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 92 (Pl. David. I. 282) (1884).—Burkill in Jour. Linn. Soc. XXVI. 498 (1899).—Schneider in Sargent, Pl. Wilson. II. 483 (1916).

Betula wutaica Mayr, Fremdl. Wald- u. Parkb. 450, fig. 169 (1906).

CHILI: west Weichang, *W. Purdom*, no. 109, 1910; Calceen wong, *W. Purdom*, no. 63, 1910; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, nos. 2095, 2106, October 4, 1922; Po hua shan, *J. Hers*, no. 1430, July 1, 1921 (sterile); Hsiao wu tai shan, alt. 2500–3100 m., *F. N. Meyer*, no. 1207, 1910, August 12, 1913; *J. Hers*, no. 1472, July 14, 1921; Trappist Monastery, western hills, near Peking, *N. H. Cowdry*, no. 1671, July 16, 1921.—See also Maximowicz, l. c., Franchet, l. c., Burkill, l. c., Schneider, l. c.

SHANSI: Wu tai shan, *H. Mayr* (ex Mayr, l. c.).

DISTRIBUTION: also Korea, Manchuria, Transbaikalia.

Betula japonica Siebold apud Winkler in Engler, Pflanzenr. IV.–61, 78 (1904).—Schneider in Sargent, Pl. Wilson. II. 485 (1916).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLI, 34, no. 39489 (1917), excl. descript.

Betula alba var. *mandshurica* Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 91 (Pl. David. I. 281) (1884).—Burkill in Jour. Linn. Soc. XXVI. 496 (1899).—Vix Regel.

Betula alba var. *verrucosa* Franchet, l. c. (1884).—Burkill, l. c. 497 (1899).—Non Regel.

Betula alba var. *Tauschii* Shirai in Tokyo Bot. Mag. VIII. 319 (1894).—Burkill in Jour. Linn. Soc. XXVI. 497 (1899).

Betula japonica var. *szechuanica* Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 5 (1922); non Schneider.

Betula verrucosa Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib, 354 (1922); non Ehrhardt.

CHILI: Central and west Weichang, *W. Purdom*, no. 103, 1910; west Weichang, *W. Purdom*, no. 124, 1910; Weichang, *W. Purdom*, nos. 8, 937, 997, 1910; Tsing shui tsien, *J. Hers*, no. 1626, September 6, 1921; Po hua shan, *J. Hers*, nos. 1428 and 1673, July 1 and September 9, 1921; Hsiao wu tai shan, *F. N. Meyer*, no. 1163, Aug. 8, 1913; Hsiao wu tai shan, Tieh ling alt. 1300 m., *J. Hers*, nos. 2136, 2142, October 7, 1922; without locality, *W. Purdom*, no. 752, 1910.—See also Franchet, l. c., Burkill, l. c. 496, 497, Schneider, l. c., Meyer, l. c., and Limpricht, l. c.

HONAN: Tsi yuan hsien, Tien tan shan, *J. Hers*, nos. 1763 and 1791, September 21, 1921.—See also Hers, l. c.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2009, September 7, 1922.

SHENSI: Lung chow, Li kia po, alt. 1400 m., *J. Hers*, no. 2394, July 4, 1922 (sterile).

DISTRIBUTION: also Manchuria, Korea, Kurile Islands, Japan.

Alnus fruticosa Ruprecht in Beitr. Pflanzenk. Russ. Reich. II. 53 (Fl. Samojed. Cisural.) (1845).—Schneider in Sargent, Pl. Wilson. II. 503 (1916).

Alnus viridis var. *julacea* Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 91 (Pl. David. I. 281) (1884).—Burkill in Jour. Linn. Soc. XXVI. 500 (1899).—Diels in Bot. Jahrb. XXIX. 282 (1900).

SHENSI: southern Shensi, *A. David* (ex Franchet, l. c., Burkill, l. c., Diels, l. c.).

DISTRIBUTION: also Siberia, Manchuria, Korea.

There are no specimens of Alnus from northern China in the herbarium of the Arnold Arboretum and no traveler since David seems to have collected a species of Alnus, but Hance (in Jour. Bot. XIII. 137 [1875]) mentions among the plants sent to him by Bretschneider from Chili a species of Alnus whose nearest connection according to him seems to be with *A. incana*.

FAGACEAE

Castanea mollissima Blume, Mus. Bot. Lugd.-Bat. I. 286 (1850).—Rehder & Wilson in Sargent, Pl. Wilson. III. 192 (1916).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XXXVII. 47 (1916); XXXVIII. 72 (1917); XXXIX. 44, 45, 101 (1917); XLIII. 37 (1918).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 6 (1922).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).

Castanea vesca Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 137 (Enum. Pl. Chin. Bor. 62) (1833); non Gaertner.

Castanea vulgaris Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 363 (Fl. Tché-foû, 130) (1876); XXXIII. 64 (Fl. Tien-tsin, 41) (1879).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 254 (1884).—Non Lamarck.

Castanea sativa Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Skan in Jour. Linn. Soc. XXVI. 525 (1899), pro parte.—Seemen in Bot. Jahrb. XXIX. 287 (1900); XXXIV. beibl. LXXV. 28 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 107 (1919).—Non Miller.

CHILI: Peking, *C. S. Sargent*, 1903 (seeds only); near San tung ying, *F. N. Meyer*, nos. 919, 920, May 28 and 31, 1913; Ying tau ho, *F. N. Meyer*, no. 1288, September 12, 1913; without locality, *Père Chanet*, no. 76.—See also Bunge, l. c., Debeaux, l. c. (1879), Rehder & Wilson, l. c., Meyer, l. c. (1916), and Cowdry, l. c.

SHANTUNG: Tsingtau, *R. Zimmermann*, no. 352, 1901.—See also Debeaux, l. c., Franchet, l. c., Faber, l. c., Seemen, l. c. (1904); Rehder & Wilson, l. c. and Meyer, l. c., 101 (1917).

HONAN: Yung ning, Tsi li ping, *J. Hers*, nos. 421, 469, 472, May 22, 1919, no. 1356, September 13, 1919; Lu shih, Tang ho, alt. 1000 m., *J. Hers*, no. 943, October 11, 1919; Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, no. 1154, September 21, 1919; Sinan hsien, alt. 400 m., *J. Hers*, no. 1998, September 25, 1922 (fruit only); Hwei hsien, Chung hu, *J. Hers*, no. 741, June 17, 1919.—See also Hers, l. c.

SHENSI: Tai pei shan, *W. Purdom*, no. 993, 1910; Ya tze ko, southwest of Sian fu, *F. N. Meyer*, no. 1400a, September 2, 1914; mountains near Tze wu hsien, *F. N. Meyer*, no. 2013, September 1, 1915 (Herb. U. S. Dept. Agric.).—See also Seemen, l. c., Rehder & Wilson, l. c., Meyer, l. c.

DISTRIBUTION: also Kiangsu, Chekiang, Fokien, Yunnan, Szechuan, Hupeh; Korea.

Castanea Seguinii Dode in Bull. Soc. Dendr. France, 1908, 152, fig.—Rehder & Wilson in Sargent, Pl. Wilson. III. 194 (1916).—Bailey, Gent. Herb. I. 18 (1920).

HONAN: Chi kung shan, Hupeh border, L. H. Bailey, June 13, 1917.—See also Bailey, l. c.

SHENSI: mountains near Tze wu hsien, south of Sian fu, *F. N. Meyer*, September 1, 1914.

DISTRIBUTION: also Kiangsi, Chekiang, Hupeh, Kweichow, Yunnan.

Castanopsis sclerophylla Schottky in Bot. Jahrb. XLVII. 638 (1912).—Rehder & Wilson in Sargent, Pl. Wilson. III. 201 (1916).

Quercus chinensis Abel, Narr. Jour. China, 165, t. 363 (1818).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 85 (Pl. David. I. 275) (1884).

SHENSI: Tsin ling shan, alt. 1080 m., *A. David* (ex Franchet, l. c.).

DISTRIBUTION: also Hupeh, Kiangsi, Chekiang, Fokien.

None of the later collectors seems to have seen this species on the Tsin ling shan, nor does Schottky mention it when he discusses the Oak vegetation of that mountain (in Bot. Jahrb. XLVII. 678).

Quercus dentata Thunberg, Fl. Jap. 177 (1784).—Hance in Ann. Sci. Nat. sér. 5, v. 243 (1866); in Jour. Linn. Soc. x. 488 (1869).—Forbes in Jour. Bot. XXII. 86 (1884).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 82 (Pl. David. I. 272) (1884).—Skan in Jour. Linn. Soc. XXVI. 511 (1899).—Seemen in Bot. Jahrb. XXIX. 288 (1900); XXXIV. beibl. LXXV. 28 (1904).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XII. 54, 57, 73 (1907).—Rehder & Wilson in Sargent, Pl. Wilson. III. 210 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. art II. 108 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII, 114 (1922); Liste Ess. Lign. Honan, 24 (1922).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).

Quercus obovata Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 136 (Enum. Pl. Chin. Bor. 62) (1833).—Turczaninow in Bull. Soc. Nat. Moscou, x. no. VII. 157 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Carruthers in Jour. Linn. Soc. VI. 32 (1862).—

Debeaux in Act. Soc. Linn. Bordeaux XXXIII. 63 (Fl. Tien-tsin, 40) (1879).—Franchet in Mém. Sci. Soc. Nat. Cherbourg, XXIV. 254 (1884).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).

CHILI: Jehol, Palace grounds, *W. Purdom*, nos. 273, 274, 1910; near San tun ying, *F. N. Meyer*, no. 976, May 31, 1913; Tang shan hot springs near Peking, *F. N. Meyer*, no. 214, October, 1905; Chang li, *F. N. Meyer*, no. 194, October 11, 1905 (Herb. U. S. Dept. Agric.); Ming tombs, north of Peking, *J. G. Jack*, October 6, 1905; same locality, *F. N. Meyer*, nos. 182 (Herb. U. S. Dept. Agric.), 225, October, 1905; same locality, *J. Hers*, no. 1591, August 14, 1921.—See also Bunge, l. c., Hance, l. c., Forbes, l. c., Franchet, l. c. (Pl. David), Carruthers, l. c., Debeaux, l. c., Meyer, l. c. and Rehder & Wilson, l. c.

SHANTUNG: mountains near Chifu, *E. Faber* (no. 101; in Herb. Gray).—See also Franchet, l. c. (Mém. Cherbourg), Faber, l. c., Seemen, l. c. (1904), Forbes, l. c., Rehder & Wilson, l. c., Loesener, l. c.

HONAN: near Hodien, *F. N. Meyer*, no. 1852, July 7, 1914 (Herb. U. S. Dept. Agric.).—See also Hers, l. c.

SHENSI: Tsin ling shan, *W. Purdom*, no. 992, 1910.—See also Skan, l. c., Seemen, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan; eastern Mongolia, Korea, Japan.

Quercus mongolica Fischer apud Turczaninow in Bull. Soc. Nat. Moscou, I. 101 (1838).—Carruthers in Jour. Linn. Soc. VI. 32 (1862).—Forbes in Jour. Bot. XXII. 86 (1884).—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 841 (Pl. Enum. 56) (1891); in Szechenyi, Wiss. Ergeb. Reise Ostas. II. 730 (1898).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Skan in Jour. Linn. Soc. XXVI. 518 (1899).—Seemen in Bot. Jahrb. XXXIV. beibl. LXXV. 28 (1904).—Rehder & Wilson in Sargent, Pl. Wilson. III. 230 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII abt. II. 108 (1919).

Quercus sessiliflora var. *mongolica* Franchet in Nouv. Arch. Mus. Paris, sér 2, VII. 83 (Pl. David. I. 273) (1884).

CHILI: Weichang, *W. Purdom*, nos. 42, 43, 95, 97, 990 and 991, 1910; west Weichang, *W. Purdom*, nos. 105 and 114, 1910; Tsing shui tsien, *J. Hers*, no. 1635, September 6, 1921; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, nos. 2089, 2094, 2099, October 4, 1922; Hsiao wu tai shan, Tieh ling, alt. 1300 m., *J. Hers*, no. 2124, October 7, 1922; Po hua shan, *J. Hers*, no. 1404, May 1, 1921 (flowering branch); without locality, *Père Chanet*, no. 79, 1919.—See also Carruthers, l. c., Forbes, l. c., Franchet, l. c., Skan, l. c., Rehder & Wilson, l. c.

SHANTUNG: see Faber, l. c., Forbes, l. c., Skan, l. c., Seemen, l. c. and Loesener, l. c.

SHANSI: near Mo chia chuang, *F. N. Meyer*, no. 1702, July 11, 1914 (Herb. U. S. Dept. Agric.); Wu chai hsien, Ta nan kow, *Tchuang Kieh*, Hers, no. 2015, September 7, 1922.

SHENSI: south of Yenan fu, *W. Purdom*, no. 333, 1910; northwest of Yenan fu, *W. Purdom*, nos. 333a, 333b, 1910; Lung chow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2342, July 3, 1922.

KANSU: see Kanitz, l. c.

DISTRIBUTION: also Kiangsu; Manchuria, Saghalin, Korea, Japan.

Quercus liaotungensis Koidzumi in Tokyo Bot. Mag. XXVI. 166 (1912).—Rehder & Wilson in Sargent, Pl. Wilson. III. 233 (1916).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XXXIX. 101, no. 38181 (1917).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

CHILI: Hsiao wu tai shan, alt. 2000 m., *F. N. Meyer*, no. 1211, August 13, 1913; same locality, *J. Hers*, no. 1501, July 14, 1921.—See also Rehder & Wilson, l. c. and Meyer, l. c.

HONAN: Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1769, September 21, 1921; Hwei hsien, Shang lieh kiang, *J. Hers*, no. 724, June 17, 1919.—See also Hers, l. c.

DISTRIBUTION: also Manchuria (Liaotung Peninsula).

Quercus aliena Blume, Mus. Bot. Lugd.-Bat. I. 298 (1850).—Hance in Jour. Bot. XIII. 361 (1875).—Forbes in Jour. Bot. XXII. 85 (1884).—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 841 (Pl. Enum. 56) (1891); in Szechenyi, Wiss. Ergeb. Reise Ostas. II. 730 (1898).—Skan, Jour. Linn. Soc. XXVI. 505 (1899).—Seemen in Bot. Jahrb. XXIX. 288 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. III. 214 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

CHILI: Pau shan, *N. H. Cowdry*, no. 1302, May 16, 1921.—See also Hance, l. c. and Forbes, l. c.

HONAN: Yung ning, Chuan pao shan, alt. 1500 m., *J. Hers*, no. 1119, October 17, 1919.—See also Hers, l. c.

SHENSI: *G. Giraldi* (ex Skan, l. c. and Seemen, l. c.).

KANSU: see Kanitz, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Chekiang; Korea, Japan.

The only typical specimens of *Quercus aliena* I have seen from northern China are Hers' no. 1119 from Honan and Cowdry's no. 1302 from Chili. The other references cited above probably belong to the following varieties or forms; those from Chili and from Shensi may be *Q. aliena pellucida* or *Q. aliena calvescens*. From Kansu I have seen no specimens.

Quercus aliena var. **pubipes** Rehder in Jour. Arnold Arb. I. 136 (1919).—Bailey, Gent. Herb. I. 18 (1920).

HONAN: Chi kung shan, alt. 500–800 m., *L. H. Bailey*, June 13, 1917; near Ho dien, *F. N. Meyer*, no. 1853, July 7, 1914 (Herb. U. S. Dept. Agric.) Yung ning, Tsi li ping, *J. Hers*, no. 470, May 22, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, nos. 1699, 1708, September 16 and 23, 1921.

The specimens from the Tien tan shan and from Yung ning have the petioles less pubescent than the type or even glabrous but the pubescence of the under side of the leaves and their obovate shape is the same, though they are larger, measuring up to 15 cm. in length and to 11.5 cm. in width. This variety has not yet been found outside of Honan.

Quercus aliena var. **pellucida** Blume, Mus. Bot. Ludg.-Bat. I. 298 (1850).—Rehder in Jour. Arnold Arb. I. 136 (1919).—Bailey, Gent. Herb. I. 18 (1920).

Q. aliena var. *pekingensis* Schottky in Bot. Jahrb. XLVII. 636 (1912).

CHILI: mountains west of Peking, *E. Bretschneider* and *C. E. Skatschkoff* (ex Schottky, l. c.).

HONAN: Chi kung shan, *L. H. Bailey*, June 13, 1917; Kio shan, *L. H. Bailey*, June 24, 1917 (two specimens differing in the shape of the leaves); Teng feng, Yu tai shan, *J. Hers*, no. 299, June 17, 1919.

SHENSI: Han cheng hsien, Moutan shan, *W. Purdom*, no. 379, 1910.

DISTRIBUTION: also Japan.

This variety differs from the type in the glabrous or nearly glabrous under side of the leaves. I do not see how Schottky's var. *pekingensis* can be distinguished from Blume's variety by the description given by the authors; I have seen no specimen of *Q. aliena* from the neighborhood of Peking except *Q. aliena* f. *calvescens* but none with "foliis . . . glaberrimis."

Quercus aliena var. **acuteserrata** Maxim. f. **calvescens** Rehder & Wilson in Sargent, Pl. Wilson. III. 215 (1916).

Quercus aliena var. *acuteserrata* Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922); non Maximowicz sensu stricto.

CHILI: near San tung ying, *F. N. Meyer*, No. 955, May 29, 1913.

HONAN: Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, No. 1197; Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, No. 929, October 10, 1919; without precise locality, *J. Hers*, No. 183, 1919.

SHENSI: Lao y san, *G. Giraldi*, 1897; south of Sian fu, near Nan to chu, *F. N. Meyer*, no. 1693, January 21, 1916 (Herb. U. S. Dept. Agric.).

DISTRIBUTION: also Hupeh; Korea, Manchuria.

Quercus Fabri Hance in Jour. Linn. Soc. X. 202 (1869).—Rehder & Wilson in Sargent, Pl. Wilson. III. 216 (1916).—Bailey, Gent. Herb. I. 18 (1920).

HONAN: Chi kung shan, near base of mountains, *L. H. Bailey*, June, 1917 (ex Bailey, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Kiangsu, Chekiang, Kwangtung.

Quercus glandulifera Blume, Mus. Bot. Lugd.-Bat. I. 295 (1850).—Skan in Jour. Linn. Soc. XXVI. 514 (1899).—Rehder & Wilson in Sargent, Pl. Wilson. III. 212 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II.

108 (1919).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

SHANTUNG: Lau shan, *F. N. Meyer*, no. 321, August, 1907.—See also Skan, l. c., Rehder & Wilson, l. c., Loesener, l. c.

HONAN: Fu niu shan, *J. Hers*, no. 172, October 6, 1918; Lu shih, Lao kiun shan, *J. Hers*, no. 1196, September 21, 1919; Tsi yan hsien, Tien tan shan, *J. Hers*, no. 1892, September 21, 1921; without precise locality, *J. Hers*, no. 183b.—See also Hers, l. c.

DISTRIBUTION: also Kiangsu, Hupeh, Kiangsi, Szechuan, Hunan (*Handel-Mazzetti*, nos. 11614, 11929), Kweichou; Korea, Japan.

Quercus serrata Thunberg, Fl. Jap. 176 (1784).—Hance in Jour. Linn. Soc. XIII. 8 (1873).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 254 (1884).—Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 362 (Fl. Tchéfoû, 128) (1876).—Forbes in Jour. Bot. XXII. 86 (1884).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Skan in Jour. Linn. Soc. XXVI. 520 (1899).—Seemen in Bot. Jahrb. XXXIV. beibl. LXXV. 28 (1904).—Rehder & Wilson in Sargent, Pl. Wilson. III. 217 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 108 (1919).—Bailey, Gent. Herb. I. 18 (1920).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

CHILI: near San tung ying, *F. N. Meyer*, no. 977, May 31, 1913; near Chang li, *F. N. Meyer*, no. 197, October, 1905; Peking, cemetery, *J. G. Jack*, October 10, 1905.—See also Rehder & Wilson, l. c., Cowdry, l. c.

SHANTUNG: Chifu, *C. S. Sargent*, September 22, 1903.—See also Hance, l. c., Debeaux, l. c., Franchet, l. c., Faber, l. c., Forbes, l. c., Skan. l. c., Seemen, l. c., Rehder & Wilson, l. c., and Loesener, l. c.

HONAN: Lao kiun shan, alt. 900 m., *J. Hers*, no. 1234, September 23, 1919.—See also Bailey, l. c. and Hers, l. c.

SHENSI: mountains near Nan to chu, south of Sian fu, *F. N. Meyer*, no. 1691, January 21, 1914 (Herb. U. S. Dept. Agric.)

KANSU: near Yan pu ko, *F. N. Meyer*, no. 1968, October 6, 1914.

DISTRIBUTION: also Kiangsi, Chekiang, Hupeh, Szechuan, Hunan; Korea, Japan, Himalayas.

Quercus variabilis Blume, Mus. Bot. Lugd.-Bat. I. 297 (1850).—Rehder & Wilson in Sargent, Pl. Wilson. III. 219 (1916).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

Quercus chinensis Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 135 (Enum. Pl. Chin. Bor. 61) (1833).—Turczaninow in Bull. Soc. Nat. Moscou, X. no. VII. 157 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Non Abel.

Quercus Bungeana Forbes in Jour. Bot. XXII. 83 (1884).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 254 (1884); in Nouv. Arch. Mus. Paris, sér. 2, VII. 85 (Pl. David. I. 275) (1884).—Skan in Jour. Linn. Soc. XXVI.

508 (1899).—Seemen in Bot. Jahrb. XXIX. 291 (1900).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 108 (1919).

CHILI: Chang li, *F. N. Meyer*, no. 326, November, 1905; Peking, western hills, *W. Purdom*, April 30, 1912; same locality, *J. Hers*, no. 1609, August 21, 1921; Po hua shan, *J. Hers*, no. 1382, May 1, 1921.—See also Bunge, l. c., Forbes, l. c., Franchet, l. c. (Pl. David.), Skan. l. c.

SHANTUNG: Lau shan, *F. N. Meyer*, no. 307, August, 1907.—See also Forbes, l. c., Franchet, l. c. (Mém. Cherbourg), and Loesener, l. c.

HONAN: Tsi yuan hsien, Tien tan shan, *J. Hers*, nos. 1727, 1757, September 21, 1921; Teng feng, Yu tai shan, *J. Hers*, no. 303, June 17, 1919; Sung hsien, San kuan miao, alt. 1000 m., *J. Hers*, no. 1317, September 27, 1919; Hwei hsien, Pai yun sze, *J. Hers*, no. 794, June 15, 1919; Hwei hsien, Ta fu sze, *J. Hers*, no. 780, June 16, 1919; Kio shan, *L. H. Bailey*, June 22, 1917, June 24, 1917 (form with oblong, obtuse leaves).—See also Bailey, l. c., and Hers, l. c.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1835, October 3, 1921.

SHENSI: Tai pei shan, *W. Purdom*, no. 989, 1910; Moutan shan, southwest of Han chieng hsien, *W. Purdom*, no. 380, 1910; Kwan yin tang, *F. N. Meyer*, no. 1912, September 15, 1914.—See also Skan, l. c., Seemen, l. c.

KANSU: near Yu yin chen, *F. N. Meyer*, no. 1679, September 25, 1914.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan; Korea, Japan.

Quercus spinosa David apud Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 84 (Pl. David. I. 274) (1884).—Rehder & Wilson in Sargent, Pl. Wilson. III. 224 (1916).

Quercus ilicioides David, Jour. Trois. Voy. Chin. I. 148 (1875); nomen seminudum.—Bretschneider, Hist. Eur. Bot. Disc. China, 850 (1898).

Quercus Ilex var. *spinosa* Franchet in Jour. de Bot. XIII. 152 (1899).—Skan in Jour. Linn. Soc. XXVI. 516 (1899).—Seemen in Bot. Jahrb. XXIX. 290 (1900).

SHENSI: Tai pei shan, southern slope, *W. Purdom*, no. 988, 1910.—See also Franchet, l. c., Skan, l. c., Seemen, l. c.

KANSU: Chi shan, near Chen hsien, *F. N. Meyer*, nos. 1764, 1765, October 1, 1914.—See also Skan, l. c.

DISTRIBUTION: also Hupeh, Yunnan.

Quercus acrodonta Seemen in Bot. Jahrb. XXIII. beibl. LVII. 48 (1897); XXIX. 290 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. III. 225 (1916).

Quercus Ilex var. *acrodonta* Skan in Jour. Linn. Soc. XXVI. 516 (1899).

Quercus phillyreoides Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 85 (Pl. David. I. 275) (1884); non Gray.

SHENSI: Tsin ling shan, *A. David* (ex Franchet, l. c.); "Mt. Lunsan huo," *G. Giraldi* (ex Skan, l. c., Seemen, l. c. [1900]).

DISTRIBUTION: also Hupeh.

Quercus spathulata Seemen in Bot. Jahrb. XXIII. beibl. LVII. 49 (1897).—Rehder & Wilson in Sargent, Pl. Wilson. III. 226 (1916).—Hers in Jour.

N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

HONAN: Sung hsien, Shi tze miao, alt. 1200 m., *J. Hers*, no. 584, May 26, 1919.—See also Hers, l. c.

SHENSI: Niu pei shan, alt. 700 m., *J. Hers*, no. 2452, October 11, 1922.

KANSU: Kagoba, alt. 2500 m., *F. N. Meyer*, no. 1990, October 30, 1914.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan (Forrest, nos. 10098, 10572, 10600, 11414).

Quercus Baronii Skan in Jour. Linn. Soc. XXVI. 507 (1899).—Seemen in Bot. Jahrb. XXIX. 291 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. III. 226 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 24 (1922).

HONAN: Kwang yin tang, alt. 600 m., *J. Hers*, no. 32, May 10, 1919; Mi tow sze, *J. Hers*, no. 33, August 15, 1918; Teng feng, Yu tai shan, alt. 800 m., *J. Hers*, no. 249, April 23, 1919; Sung hsien, Shih tze miao, *J. Hers*, no. 566, May 26, 1919; Yung ning, Tsi li ping, *J. Hers*, no. 463, May 22, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, nos. 1756, 1759, September 21, 1921.—See also Hers, l. c.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1834. October 2, 1921; without precise locality, *J. Hers*, no. 2000, September, 1922.

SHENSI: "Kin qua san," *G. Giraldi*, July 10, 1897; "Lao y san," *G. Giraldi*, 1897; near Sze wu hsien, south of Sian fu, *F. N. Meyer*, no. 1890, September 1, 1914; near Nan to tchu, south of Sian fu, *F. N. Meyer*, no. 1692, January 21, 1914; Cheng shih tan, alt. about 900 m., *J. Hers*, no. 2436, October 8, 1922.—See also Skan, l. c., Seemen, l. c., Rehder & Wilson, l. c.

KANSU: Near Yan pu ko, *F. N. Meyer*, no. 1973, October 6, 1914.

DISTRIBUTION: also Hupeh, Szechuan.

Quercus myrsinaefolia Blume, Mus. Bot. Lugd.-Bat. I. 305 (1850).—Rehder & Wilson in Sargent, Pl. Wilson. III. 236 (1916).—Bailey, Gent. Herb. I. 18 (1920).

HONAN: Chi kung shan, alt. 500–800 m., *L. H. Bailey*, June 30, 1917.—See also Bailey, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan, Hunan (*Handel-Mazzetti*, no. 11791), Hongkong; Japan.

ULMACEAE

Ulmus macrocarpa Hance in Jour. Bot. VI. 332 (1868).—Planchon in De Candolle, Prodr. XVII. 162 (1873).—Maximowicz in Bull. Acad. Sci. St. Pétersb. XVIII. 289 (1873); in Mél. Biol. IX. 22 (1873).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 78, t. 8, fig. C. (Pl. David. I. 268) (1884).—Hemsley in Jour. Linn. Soc. Bot. XXVI. 447 (1894).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XIV. 48, no. 22364 (1909).—Schneider in Sargent, Pl. Wilson. III. 251 (1916) —Hers in Jour.

N. China Branch R. As. Soc. LIII. 117 (1922); Liste Ess. Lign. Honan, 32 (1922).

Ulmus sp. novae 2 Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).

Ulmus spec. Meyer in Bull. U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XV. 24, nos. 22678, 22682 (1909).

Ulmus Davidiana Schneider in Sargent, Pl. Wilson. III. 261 (1916), quoad specimina e Chili; non Planchon.

CHILI: Weichang, *W. Purdom*, no. 262, 1910; Kalgan, *N. H. Cowdry*, nos. 1378 and 1583, June 2 and 27, 1921; Trappist Monastery, western hills near Peking, *N. H. Cowdry*, no. 1679, July 16, 1921; Nankow Pass, *F. N. Meyer*, no. 208, November, 1905; Nankow, rocky cliffs, *F. N. Meyer*, no. 1034, July 27, 1913; near Shih wen in rocky crevices and in loess cliffs, *F. N. Meyer*, no. 1088, August 3, 1913; Ming tombs, *J. Hers*, no. 1592, August 14, 1921; western hills near Peking, *J. Hers*, nos. 1587, 2228, August 7, 1921 and October 11, 1922; Po hua shan, *J. Hers*, no. 1669, September 9, 1921; Hsiao wu tai shan, *J. Hers*, nos. 1492, 2196bis, July 14, 1921 and October 9, 1922; Huai lai hsien, Liu shu chwang, alt. 800 m., *J. Hers*, no. 2078, October 3, 1922; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, no. 2107, October 4, 1922; Ta hung men, alt. 700 m., *J. Hers*, no. 2215, October 10, 1922; Ta miao, alt. 900 m., *J. Hers*, no. 2212, October 10, 1922.—See also Maximowicz, l. c., Hance, l. c., Planchon, l. c., Franchet, l. c., Hemsley, l. c., Meyer, l. c. XIV. 48 (1909).

HONAN: Kung hsien, *J. Hers*, nos. 34, 87, May 10, 1919 and April 7, 1920 (fruit); Hwei hsien, Ta fu sze, *J. Hers*, no. 783, June 16, 1919.—See also Hers, l. c.

SHANSI: Yento, *F. N. Meyer* (ex Schneider, l. c.); Hia hsien, Low shan, *J. Hers*, no. 1877, October 3, 1921; Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers nos. 2046, 2049, Sept. 7, 1922.—See also Meyer, l. c., XV. 24 (1909).

SHENSI: Yenan fu district, *W. Purdom*, nos. 349, 356 (fruits), 1911.

DISTRIBUTION: also Manchuria, northern Korea.

Ulmus Bergmanniana Schneider, Ill. Handb. Laubholzk. II. 902, fig. 565 a–b (1912); in Sargent, Pl. Wilson. III. 240 (1916).

HONAN: without precise locality, *J. Hers*, No. 6, 1918.

KANSU: Chi shan, near Cheng hsien, *F. N. Meyer*, No. 1638, October 1, 1914.

DISTRIBUTION: also Hupeh, Szechuan.

Meyer's specimen from Kansu, which is like the Honan specimen unfortunately sterile, differs from typical *U. Bergmanniana* in its broader distinctly elliptic leaves which measure 8–10 cm. in length and 4.5–6 cm. in width, but in all other characters it agrees with typical Hupeh specimens.

Ulmus laciniata Mayr, Fremdl. Wald- u. Parkb. 523, fig. 243 (1906).—Schneider in Sargent, Pl. Wilson. III. 255 (1916).

CHILI: Weichang, *W. Purdom*, no. 87, 1910; Hsiao wu tai shan, *J. Hers*, nos. 1528, 1566, July 14 and 16, 1921 (sterile); same locality, *F. N. Meyer*, no. 1328, August 23, 1913.—See also Schneider, l. c.

DISTRIBUTION: also Manchuria, Korea, Japan.

Ulmus Wilsoniana Schneider, Ill. Handb. Laubholzk. II. 904, figs. 565e, 566c–d (1912); in Sargent, Pl. Wilson. III. 238 (1916).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 117 (1922); Liste Ess. Lign. Honan, 32 (1922).

HONAN: Mien chih, alt. 800 m., *J. Hers*, no. 57, August 20, 1919; Teng feng hsien, Yu tai shan, alt. about 800 m., *J. Hers*, no. 232, April 23, 1919; Yung ning, Tsi li ping, *J. Hers*, no. 468, May 22, 1919; Yung ning, Chuan pao shan, *J. Hers*, no. 1110, October 17, 1919.—See also Bailey, l. c. and Hers, l. c.

DISTRIBUTION: also Hupeh.

The first three specimens which are all sterile agree well with typical material from Hupeh, but no. 1110 from the Chuan pao shan represented by slender shoots with rather small glabrescent leaves is doubtful, but may belong to var. *psilophylla* Schneider.

Ulmus japonica Sargent, in Trees & Shrubs, II. 1, t. 101 (1907).—Schneider in Sargent, Pl. Wilson. III. 258 (1916).—Komarov in Bull. Jard. Bot. Pierre le Grand, XVI. 175 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 116 (1922); Liste Ess. Lign. Honan, 32 (1922).

Ulmus campestris a. *vulgaris* Maximowicz in Bull. Acad. Sci. St. Pétersb. XVIII. 290 (1873); in Mél. Biol. IX. 22 (1873); non Spach.

Ulmus campestris f. *suberosa* Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 78 (Pl. David. I. 268) (1884); non Wahlenberg.

Ulmus campestris Hemsley in Jour. Linn. Soc. XXVI. 446 (1894), pro parte.—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Seemen & Loesener in Bot. Jahrb. XXXIV. beibl. LXXV. 29 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. art. II. 109 (1919).—Non Linnaeus.

CHILI: Hsiao wu tai shan, *F. N. Meyer*, no. 1328, August 23, 1913; same locality, *J. Hers*, no. 1518, July 14, 1921; Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, no. 2159, October 8, 1922; Huai lai hsien, Yang kia ping, alt. 900 m., *J. Hers*, no. 2108, October 4, 1922; Po hua shan, *J. Hers*, nos. 1382, 1455, 1682, May 1, July 1 and September 9, 1921; Shi feng ko, *F. N. Meyer*, no. 993, June 2, 1913.—See also Maximowicz, l. c., Franchet, l. c., Hemsley, l. c. and Schneider, l. c.

SHANTUNG: See Faber, l. c., Seemen & Loesener, l. c., Schneider, l. c. and Loesener, l. c.

HONAN: Sung hsien, Shih tze miao, *J. Hers*, no. 492, May 26, 1919; Sung hsien, San kuan miao, alt. about 1200 m., *J. Hers*, no. 537, May 24, 1919; Hwei hsien, Shang lieh kiang, *J. Hers*, no. 728, June 17, 1919.—See also Hers, l. c.

SHANSI: Hu po po, southeastern Shansi, *F. N. Meyer*, no. 1632, July 10, 1914 (Herb. U. S. Dept. Agric.).

SHENSI: Pai shi pu, *F. N. Meyer*, no. 1636, September 18, 1914 (Herb. U. S. Dept. Agric.); Lung chow, Li kia po, alt. 1800 m., *J. Hers*, no. 2368, July 4, 1922.

KANSU: near Ping lo, *F. N. Meyer*, no. 1644, October 7, 1914 (Herb. U. S. Dept. Agric.).

DISTRIBUTION: also Manchuria, Korea, Japan.

The specimens enumerated above are unfortunately all sterile, but agree with typical *U. japonica* from Japan, except Hers' nos. 1455 and 1682 which have nearly glabrous branchlets and leaves and look more like *U. foliacea* Gilib.

Komarov in his Annotations to the flora of southern Ussuri (in Bull. Jard. Bot. Pierre le Grand, XVI. 164 [1916]) distinguishes the following varieties of *U. japonica:* α. *laevis*, β. *scabra*, γ. *puberula* and δ. *saxatilis*. These probably occur, at least partly, also in northern China, but with the incomplete material at hand and without having seen any of Komarov's material it does not seem advisable to try to identify the Chinese material with Komarov's varieties.

Ulmus Davidiana Planchon in Compt. Rend. Acad. Sci. Paris, LXXIV pt. 1, 1498 (1872), nomen; in De Candolle, Prodr. XVII. 158 (1873).—Schneider in Sargent, Pl. Wilson. III. 261 (1916), in part.—Hers in Jour. N. China Branch R. As. Soc. LIII. 116 (1922); Liste Ess. Lign. Honan, 32 (1922).

CHILI: Jehol, *A. David*, no. 1716 (ex Planchon, l. c.).

DISTRIBUTION: also Kiangsu (*J. Hers*, no. 664).

Of this species I have seen a young leaf and a fruit of the type kindly sent to the Arboretum by Professor H. Lecomte of the Natural History Museum in Paris. The other specimens referred by Schneider (l. c.) to this species I am unable to separate from *U. macrocarpa* Hance, from which sterile specimens of *U. Davidiana* may be distinguished by the absence of the corky wings, by the smaller and narrower leaves slightly pubescent above when young and soon glabrous, pubescent beneath, by the densely pubescent petioles and by the winter-buds covered with grayish silky pubescence; in *U. macrocarpa* the branches usually develop two broad corky wings, the leaves are much broader and larger, usually rhombic-obovate, very scabrid above, and glabrescent beneath, the petioles are only slightly pubescent and the winter-buds are dark chestnut-brown or nearly black and only slightly villose.

A specimen with young fruit collected in northern Kiangsu, on the Liu lin shan, near Haichow (*J. Hers*, no. 664) apparently belongs here; in the pubescence of the samara and the leaves it agrees with the type but the leaves are more cuneate at base and the samara is nearly rounded and abruptly contracted at the base; the hirsute pubescence of the branchlets persists until the second year.

The inclusion of *U. Davidiana* by Hers in his list of Honan plants is probably an error and based on his no. 664 from Kiangsu.

Ulmus pumila Linnaeus, Spec. 226 (1753).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 135 (Enum. Pl. China Bor. 61) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 78 (Pl. David. I. 268) (1884).—Schneider in Sargent, Pl. Wilson. III. 242 (1916).—Bailey Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 117 (1922); Liste Ess. Lign. Honan, 32 (1922).

Ulmus campestris δ. *pumila* Maximowicz in Bull. Acad. Sci. St. Pétersb. XVIII. 290 (1873); in Mél. Biol. IX. 23 (1873).—Pritzel in Bot. Jahrb. XXIX. 296 (1900).

Ulmus campestris Hemsley in Jour. Linn. Soc. XXVI. 446 (1894), pro parte; non Linnaeus.

CHILI: Weichang, *W. Purdom*, no. 96, 1910; Nankow, *J. G. Jack*, October 6, 1905; Shi wen, *F. N. Meyer*, no. 1069, August 2, 1913; Calceen wong, *W. Purdom*, no. 61, 1910; Hsiao wu tai shan, *F. N. Meyer*, no. 1385, August 30, 1913; Peking, Temple of Agriculture, *C. S. Sargent*, September 15, 1905; near Peking, *J. G. Jack*, October 7 and 9, 1905; Peking, Temple of Heaven, *E. H. Wilson*, April 14, 1909; Peking, *F. N. Meyer*, no. 1403, April 30, 1913; Peking, city wall, *F. N. Meyer*, no. 206, September, 1905, no. 923, April 18, 1913, no. 928, May 20, 1913 (var. foliis variegatis); Peking plain, *W. Purdom*, no. 1048, 1910; Wo fu ssu, *N. H. Cowdry*, no. 1014, September 26, 1920.—See also Bunge, l. c., Franchet, l. c., Maximowicz, l. c., and Schneider, l. c.

SHANTUNG: Chifu, *C. S. Sargent*, September 27, 1905.—See also Schneider, l. c.

HONAN: "the common Elm of the Honan plain," *J. Hers*, 1919.—See also Hers, l. c.

SHANSI: near Tsin tse, *F. N. Meyer*, no. 416, May, 1907 (sterile; Herb. U. S. Dept. Agric.); Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2043, September 7, 1922.

SHENSI: Yenan fu district, south, *W. Purdom*, no. 357, 1910; Tai pei shan, *W. Purdom*, nos. 417 and 984, 1910.—See also Pritzel, l. c.

DISTRIBUTION: also Kiangsi, Szechuan, Yunnan; Transbaikalia, Manchuria, Korea.

The specimens exhibit a wide variation in the size and shape of the leaves; some of the vigorous shoots of Hers' specimens from Honan have oblong-lanceolate leaves up to 10 cm. long, while Purdom's specimens from Tai pei shan have rhombic-elliptic leaves 2–3.5 cm. long and pilose on the midrib and partly on the veins beneath and the branchlets are thinly appressed-pubescent as in Meyer's nos. 928, 1069 and 1385 from Peking. In Meyer's no. 416 from Shansi doubtfully referred to this species, the branchlets and petioles are short-villose and the young leaves are slightly pubescent on both sides. Piasezki's specimens cited "ex Maximowicz" from Shensi and Kansu by Hemsley (l. c.) may belong here, but there is no other evidence that *U. pumila* occurs in Kansu.

Ulmus pumila f. pendula Rehder in Bailey Cycl. Am. Hort. IV. 1882 (1902), pro var.—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XLIII. 37, pl. 2 (1918), pro var.

CHILI: near Peking and Feng tai (ex Meyer, l. c.).

Meyer's photograph reproduced on pl. 2 (l. c.) shows a large tree growing on an old grave near Feng tai in its winter state with nearly horizontally spreading tortuous branches and pendulous branchlets.

Ulmus glaucescens Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 76, t. 8, fig. a (Pl. David. I. 267) (1884).—Schneider in Sargent, Pl. Wilson, III. 263 (1916).

This species is not known to me from China proper; it was collected by David (no. 2634 ex Franchet, l. c.) near "Sartchy" or Sarchi about 20 miles west of the border of northern Shansi, but not in Shansi itself as stated by Schneider (l. c.).

Ulmus parvifolia Jacquin, Pl. Rar. Hort. Schoenbr. III. 6, t. 262 (1798).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 253 (1884).—Pritzel in Bot. Jahrb. XXIX. 296 (1900).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XIV. 49, no. 22375 (1909); XXXIX, 47 (1917).—Schneider in Sargent, Pl. Wilson. III. 244 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 108 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 117 (1922); Liste Ess. Lign. Honan, 32 (1922).

CHILI: Temple of Heaven grounds, *F. N. Meyer*, no. 187, September, 1905.—See also Meyer, l. c. (1909).

? SHANTUNG: Chifu, *A. A. Fauvel* (ex Franchet, l. c.).

HONAN: without precise locality, *J. Hers*, no. 2, 1918.—See also Hers, l. c.

SHENSI: In kia po, *G. Giraldi*, October, 1897; Tze wen hsien, *F. N. Meyer*, no. 1634, September 1, 1914; Lan yu ko, *F. N. Meyer*, no. 1635, September 5, 1914.—See also Pritzel, l. c. and Meyer, l. c. (1917).

DISTRIBUTION: also Kiangsu (*J. Hers*, nos. 620, 1029), Hupeh, Hunan. Kwangtung; Korea, Japan.

This species does not seem to occur spontaneously in Chili; Meyer's nos. 1069 and 1385 from Shi wen and the Hsiao wu tai shan cited by Schneider (l. c.) under *U. parvifolia* belong to *U. pumila* L. and represent the form with appressed-pubescent branchlets. Its occurrence in Shantung is also doubtful; Fauvel's specimen from Chifu is more likely to be *U. pumila*, of which specimens from Chifu are in this herbarium.

Celtis koraiensis Nakai in Jour. Coll. Sci. Tokyo XXXI. 191, pl. 18 (Fl. Kor. II) (1911); in Tokyo Bot. Mag. XXVIII. (265), figs. 2aa, cc (1914).—Yabe, Enum. Pl. Manch. 37, t. 2, fig. 4 (1912).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 7 (1922).

? *Celtis spec.* Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 109 (1909).

CHILI: Po hua shan, *J. Hers*, no. 1394[a], May 1, 1921.

SHANTUNG: Lau shan and Cape Yatau (ex Loesener, l. c.).

HONAN: Teng feng, Yu tai shan, *J. Hers*, no. 207[bis], April 23, 1919; Lu shih, Tang ho, alt. 1000 m., *J. Hers*, no. 961, October 11, 1919; Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, no. 1292, September 25, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1734, September 21, 1921; Yung ning, Tsi li ping, *J. Hers*, nos. 439, 1373, May 22 and September 30, 1919; Yung ning, Yo tze ping, alt. 1000 m., *J. Hers*, no. 823, October 4, 1919; Hwei hsien, Shang lieh kiang, *J. Hers*, no. 726, June 17, 1919; Hwei hsien, Ta fu sze, *J. Hers*, no. 753, June 16, 1919; without locality, *J. Hers*, no. 1992.—See also Hers, l. c.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1847, October 2, 1921.

SHENSI: Lung chow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2339, July 3, 1922.

DISTRIBUTION: also Kiangsu (*J. Hers*, nos. 1011, 1071); southern Manchuria, Korea.

This is a remarkable species easily recognized by its large peculiarly shaped leaves which are furnished at the truncate apex with an elongated lanceolate or linear-lanceolate middle lobe and with usually several lateral elongated teeth; the leaves are usually 8–12 cm. long, but on coppice shoots may attain 17 cm. in length and as much in width; the dull orange-yellow slender-stalked fruits are about 1 cm. high. According to Loesener's description his *Celtis spec.* from Shantung is apparently *C. koraiensis.*

Celtis labilis Schneider in Sargent, Pl. Wilson. III. 267 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 7 (1922).

CHILI: Hsiao wu tai shan, *J. Hers*, no. 1495, July 14, 1921.

HONAN: Yung ning, Tsi li ping, alt. about 1100 m., *J. Hers*, no. 411 bis, May 22, 1919; Sung hsien, San kuan miao, alt. about 1200 m., *J. Hers*, no. 512, May 24, 1919; Hwei hsien, Ta fu sze, *J. Hers*, no. 781, June 16, 1919.—See also Hers, l. c.

KANSU: Tsing chow, Kuan tze chen, alt. 1600 m., *J. Hers*, no. 2414, July 22, 1922 (sterile).

DISTRIBUTION: also Kiangsu (*J. Hers*, no. 672), Hupeh.

The specimens enumerated above are all sterile, but they agree in shape and pubescence of the leaves with specimens from Hupeh, though the leaves are generally smaller.

Celtis Bungeana Blume, Mus. Bot. Lugd.-Bat. II. 71 (1852).—Planchon in De Candolle, Prodr. XVII. 171 (1873).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 253 (1884); in Nouv. Arch. Mus. Paris, sér. 2, VII. 79 (Pl. David. I. 269) (1884).—Hemsley in Jour. Linn. Soc. XXVI. 449 (1894), pro parte.—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).—Meyer in U. S. Dept. Agric. Bur. Pl. Indust. Invent. Seeds Pl. Imp. XIV. 29, no.

21972 (1909).—Schneider in Sargent, Pl. Wilson. III. 269 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII, abt. II. 109 (1919).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 7 (1922).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).

Celtis chinensis Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 135 (Enum. Pl. Chin. Bor. 61) (1833).—Turczaninow in Bull. Soc. Nat. Moscou, X. no. VII. 157 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Non *C. sinensis* Pers.

Celtis sinensis Planchon in Ann. Sci. Nat. sér. 3, X. 286 (1848).—Maximowicz in Bull. Acad. Sci. St. Pétersb. XVIII. 293; in Mél. Biol. IX. 27 (1873), quoad specimina e China bor.—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).—Non Persoon.

Celtis Davidiana Carrière in Rev. Hort. 1868, 300.—Planchon in De Candolle Prodr. XVII. 172 (1873).—Hemsley in Jour. Linn. Soc. XXVI. 450 (1894).

Celtis Biondii Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 7 (1922); non Pampanini.

CHILI: Weichang, *W. Purdom*, no. 1127, 1910; San tun ying, *F. N. Meyer*, no. 965, May 29, 1913; Ta miao, alt. 900 m., *J. Hers*, no. 2211, October 10, 1922; Ta hung men, *J. Hers*, no. 2214, October 10, 1922; Hsiao wu tai shan, *J. Hers*, no. 1475, July 14, 1921; Hsiao wu tai shan, southeastern valley, alt. 900–1500 m., *J. Hers*, no. 2202, October 9, 1922; Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, nos. 2169, 2178, October 8, 1922; Po hua shan, *J. Hers*, nos. 1389 and 1655, May 1 and September 9, 1921; Peking, British Legation, *W. Purdom*, no. 987, 1909; Peking, Temple of Heaven, *J. Hers*, no. 90, May 9, 1920; Ying tau ko, *F. N. Meyer*, no. 1286, September 12, 1913 (Herb. U. S. Dept. Agric.); Wen tow kow, *N. H. Cowdry*, no. 479, June 8, 1920; Tung ling, hills north of wall, *N. H. Cowdry*, no. 2161, May 18, 1921.—See also Bunge, l. c., Planchon, l. c., Maximowicz, l. c., Franchet, l. c. (Pl. David.), Schneider, l. c. and Cowdry, l. c.

SHANTUNG: Lung tung, *F. N. Meyer*, no. 247, September 28, 1907 (U. S. Dept. Agric.), no. 272, September, 1907.—See also Franchet, l. c. (Mém. Cherbourg), Faber, l. c., Seemen & Loesener, l. c., Meyer, l. c., Schneider, l. c., and Loesener, l. c.

HONAN: Teng feng hsien, Yu tai shan, *J. Hers*, nos. 229 and 280, April 23 and June 17, 1919; Sia shih, Shan show, alt. 700 m., *J. Hers*, no. 811, October 2, 1919; Yung ning, Yo tze ping, alt. 1000 m., *J. Hers*, no. 822, October 4, 1919; Yung ning, Tsi li ping, about 1100 m., *J. Hers*. nos. 411 and 1330, May 22 and September 30, 1919; Hwei hsien, Ping lo, *J. Hers*, no. 733, June 18, 1919; Hwei hsien, Pei yao, *J. Hers*, no. 809, June 18, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1715, September 20, 1921; Ho dien, *F. N. Meyer*, no. 1868, July 7, 1914.—See also Hers, l. c.

SHANSI: Hiao hsien, Huang lai kow, *J. Hers*, no. 1856, October 2, 1921.

SHENSI: "Ta sce tsuen," *G. Giraldi*, September 15, 1897; northwest of Han cheng hsien, *W. Purdom*, no. 376, 1910.—See also Diels, l. c., Schneider, l. c.

KANSU: Liang tang, *F. N. Meyer*, no. 1674, September 25, 1914 (Herb.

U. S. Dept. Agric.), Tsing shui hsien, Ta liu shan, *J. Hers*, no. 2400, July 7, 1922.

DISTRIBUTION: also Kiangsu, Hupeh, Szechuan, Yunnan; Manchuria, Korea.

Young leaves of this species are occasionally more or less appressed pubescent, as Purdom's no. 376 from Shensi which has some branchlets nearly glabrous and others together with the petioles minutely but densely grayish pubescent with the leaves thinly appressed-pubescent; Hers' no. 229 from Honan is similar to the latter, but the fruiting specimen (no. 280) from the same locality is perfectly glabrous and a typical *C. Bungeana* except that the leaves are rather narrower. On vigorous shoots as Hers' no. 1330 the leaves may be scabrid above and more or less pilose beneath, while his no. 411 from the same locality has smooth and glabrous or nearly glabrous leaves. Cowdry's no. 479 and Hers' no. 2169 represent apparently a juvenile form with part of the leaves constricted about the middle into an elongated lanceolate or linear-lanceolate lobe.

Pteroceltis Tatarinowii Maximowicz in Bull. Acad. Sci. St. Pétersb. XVIII. 293, fig. (1873); in Bull. Soc. Nat. Moscou, LIV. 53 (Fl. As. Or. Fragm.) (1879).—Hemsley in Jour. Linn. Soc. XXVI. 451 (1894).—Pritzel in Bot. Jahrb. XXIX. 297 (1900).—Schneider in Sargent, Pl. Wilson. III. 284 (1916).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 114 (1922); Liste Ess. Lign. Honan, 23 (1922).

Ulmi spec. nov. Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).

CHILI: Peking, cultivated, *A. Tatarinow* (ex Maximowicz, l. c. and Schneider, l. c.).

SHANTUNG: Lung tung, *F. N. Meyer*, no. 247, September 25, 1907.

HONAN: Kio shan, *L. H. Bailey*, June 22, 1917.—See also Bailey, l. c. and Hers, l. c.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1843, October 2, 1921 (sterile).

SHENSI: "Lao-y-san," *G. Giraldi*, September 6, 1897; Niu pei shan, alt. 700 m., *J. Hers*, no. 2450, October 11, 1922.—See also Maximowicz, l. c. (1879), Pritzel, l. c., Hemsley, l. c., and Schneider, l. c.

KANSU: Tsing chow, Mao kia chwang, alt. 1200 m., *J. Hers*, no. 2429, October 6, 1922.—See also Maximowicz, l. c. (1879), and Hemsley, l. c.

DISTRIBUTION: also Kiangsu (*Hers*, nos. 1014, 1062), Hupeh, Szechuan, Kweichou.

Hers' no. 2450 from Shensi is represented by sterile much branched specimens with short and thin branchlets and very small leaves measuring only 1.5–2 cm. in length, only a few at the end of some branchlets being up to 3 cm. long.

Hemiptelea Davidii Planchon in Compt. Rend. Acad. Paris, LXXIV. 132, 1496 (1872); in De Candolle Prodr. XVII. 165 (1873).—Maximowicz

in Bull. Acad. Sci. St. Pétersb. XVIII. 289; in Mél. Biol. IX. 22 (1873).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 78, t. 9 (Pl. David. I. 268) (1884).—Schneider in Sargent, Pl. Wilson. III, 288 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 111 (1922); Liste Ess. Lign. Honan, 15 (1922).

Planera ? vel genus novum Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).

Planera Davidii Hance in Jour. Bot. VI. 333 (1868).

Zelkova Davidii Hemsley in Jour. Linn. Soc. XXVI. 449 (1894).—Faber in Denkschr. Entwickel. Kiautschou, 29 (1898).—Seemen & Loesener in Bot. Jahrb. XXXIV. beibl. LXXV. 29 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 109 (1919).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 173 (Pl. Peitaiho) (1922).

CHILI: Weichang, *W. Purdom*, no. 296bis, 1909; Jehol, *A. David* (Gray Herb.), *W. Purdom*, no. 296, 1909; San tun ying, *F. N. Meyer*, no. 990, June 2, 1913; Peitaho, East Cliff, *N. H. Cowdry*, no. 149, July, 1919; Wen tow kow, *N. H. Cowdry*, no. 482, June 8, 1920; near Peking, *C. A. Skatschkoff* (Gray Herb.).—See also Planchon, l. c., Maximowicz, l. c., Franchet, l. c., Hance, l. c., Hemsley, l. c. and Cowdry, l. c.

SHANTUNG: See Faber, l. c., Seemen & Loesener, l. c. and Loesener, l. c.

HONAN: See Hers, l. c.

SHENSI: Lung chow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2334, July 3, 1922.

KANSU: Yin kwan dien, *F. N. Meyer*, no. 1678, September, 1914 (Herb. U. S. Dept. Agric.).

DISTRIBUTION: also Chekiang, Kiangsu, Hunan (*Handel-Mazzetti*, no. 12547); Manchuria, Korea.

Zelkova sinica Schneider in Sargent, Pl. Wilson. III. 286 (1916).—Bailey, Gent. Herb. I. 18 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 117 (1922); Liste Ess. Lign. Honan, 34 (1922).

Zelkova acuminata Hemsley in Jour. Linn. Soc. XXVI. 449 (1894), pro parte.—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).—Non Planchon.

HONAN: Yung ning, Tsi li ping, alt. 1100 m., *J. Hers*, nos. 403, 466, May 22, 1919; Sung hsien, San kuao miao, *J. Hers*, no. 552, May 24, 1919; Sia shih, Shan chow, alt. 700 m., *J. Hers*, no. 810, October 2, 1919; Hwei hsien, Pei yao, *J. Hers*, no. 82, June 18, 1919; Ku hsien, Kiang tze po, alt. 600 m., *J. Hers*, no. 843, Oct. 6, 1919; Lu shih, Tang ho, alt. 1000 m., *J. Hers*, no. 957, October 11, 1919; Sung hsien, Shih tze miao, *J. Hers*, no. 1294, September 25, 1919; Sung hsien, San kuan miao, alt. 1000 m., *J. Hers*, no. 1315, September 27, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1782, September 21, 1921; Kio shan, *L. H. Bailey*, June 23, 1917; without precise locality, *J. Hers*, no. 784.—See also Bailey, l. c. and Hers, l. c.

SHANSI: Pai dja dien, *F. N. Meyer*, no. 1637, September 18, 1914; Hia hsien, Hung lai kow, *J. Hers*, nos. 1832, 1839, October 2, 1921.

SHENSI: "Kian san," *G. Giraldi*, August 4, 1897; "Lao-y-san," G. Giraldi, 1897; Tai pei shan, *W. Purdom*, nos. 985, 986, 1910; Lung chow,

Kuan shan, alt. 2000 m., *J. Hers*, no. 2367, July 3, 1922.—See also Diels, l. c. and Schneider, l. c.

KANSU: near Yan pu ko, *F. N. Meyer*, no. 1641, October 7, 1914; Tchu tsai tze, *F. N. Meyer*, no. 1643, October 29, 1914.

DISTRIBUTION: also Hupeh, Kiangsu, Chekiang.

Aphananthe aspera Planchon in Ann. Sci. Nat. x. 265 (1848).—Schneider in Sargent, Pl. Wilson. III. 290 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 109 (1919).

SHANTUNG: Cape Yatau (ex Loesener, l. c.).

DISTRIBUTION: also Kiangsu (*Hers*, nos. 603, 2284, 2315), Chekiang, Kiangsi, Kwangtung, Hunan (*Handel-Mazzetti*, no. 11088); Korea, Japan, Formosa.

MORACEAE

Morus alba Linnaeus, Spec. 986 (1753).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 134 (Enum. Pl. Chin. Bor. 60) (1833).—Maximowicz in Mém. Div. Sav. Acad. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 361 (Fl. Tché-foû, 128) (1876).—Hemsley in Jour. Linn. Soc. XXVI. 455 (1894).—Faber in Denkschr. Entwickel, Kiautschou, 30 (1898).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 29 (1904).—Schneider in Sargent, Pl. Wilson. III. 294 (1916).—Koidzumi in Bull. Imp. Seric. Exp. Sta. Jap. IX. 52, t. 10 (Rev. Gen. Morus) (1917).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 109 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 112 (1922); Liste Ess. Lign. Honan, 19 (1922).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).

? *Morus constantinopolitana* Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 134 (Enum. Pl. Chin. Bor. 60) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Vix Poiret.

CHILI: without locality, *Père Chanet*, no. 71, 1919 (sterile).—See also Bunge, l. c., and Hemsley, l. c.

SHANTUNG: Tsingtau and Lau shan, *O. Nebel* (ex Gilg, l. c.).—See also Faber, l. c., Debeaux, l. c., and Loesener, l. c.

HONAN: without locality, *J. Hers* (probably planted).—See also Hers, l. c.

KANSU: Tsing chow, alt. 1280 m., *J. Hers*, no. 2404, July 15, 1922.

DISTRIBUTION: also Kiangsi, Hupeh, Szechuan, Yunnan; India, Japan.

Morus alba seems to occur only as a cultivated plant in northern China; the specimens from near Peking, enumerated by Hemsley (l. c.) probably belong to other species. Père Chanet's specimen from Chili and J. Hers' specimen from Honan, both without exact locality, are probably from cultivated plants and so are probably Nebel's specimens from Shantung cited by Gilg (l. c.) and by Loesener (l. c.) who also cite for the same localities *M. nigra* L. which is mentioned by Fauvel (in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 253 [1884]) as being cultivated near Chi fu. These

citations in all probability refer to a black-fruited form of *M. alba; M. nigra* is not known to be cultivated in China.

Of *Morus alba* var. *laciniata* Beiss. cited by Hers (l. c.) as occurring in Honan, I have seen no specimens; *M. alba* var. *laciniata* Beiss., not K. Koch, is a synonym of *M. alba* f. *skeletoniana* Schneid. and is a garden form which originated in North America.

Morus cathayana Hemsley in Jour. Linn. Soc. XXVI. 456 (1894).—Schneider in Sargent, Pl. Wilson. III. 292 (1916).—Koidzumi in Bull. Imp. Seric. Exp. Sta. Jap. IX. 42 (Rev. Gen. Morus) (1917).

HONAN: Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, September 21, 1919.

SHENSI: Lung chow, Lia kiao po, alt. 1800 and 1400 m., *J. Hers*, nos. 2371 and 2381, July 4, 1922.

DISTRIBUTION: also Kiangsu, Chekiang, Hupeh, Szechuan, Hunan (*Handel-Mazzetti*, no. 12106).

The three specimens cited are sterile, but according to shape, serration and pubescence of the leaves they apparently belong here, though no. 2381 has the leaves deeply lobed, a shape not common in this species.

Morus mongolica Schneider in Sargent, Pl. Wilson. III. 296 (1916).—Koidzumi in Bull. Imp. Seric. Exp. Sta. Jap. IX. 29, t. 1, fig. b–e (Rev. Gen. Morus) (1917).

Morus alba var. *mongolica* Bureau in De Candolle, Prodr. XVII. 241 (1873).

CHILI: "ad Gehol," *A. David* (no. 1804, partly, ex Bureau); Pan shan, highest temple grounds, *N. H. Cowdry*, no. 1244, May 18, 1921.

HONAN: Yung ning, Tsi li ping, alt. 1000 m., *J. Hers*, no. 1353, September 30, 1919.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1861, October 2, 1921.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan; Manchuria, Korea.

Morus mongolica var. **diabolica** Koidzumi in Tokyo Bot. Mag. XXXI. 36 (1917); in Bull. Imp. Seric. Exp. Sta. Jap. IX. 30, t. 1, fig. a (Rev. Gen. Morus) (1917).

Morus alba var. *mongolica* Bureau in De Candolle, Prodr. XVII. 242 (1873), quoad plantam foliis pubescentibus.

CHILI: "ad Gehol," A. David (no. 1804, partly, ex Bureau); Pan shan, temple garden wall, *N. H. Cowdry*, no. 1306, May 16, 1921; Hsiao wu tai shan, southeastern valley, alt. 900–1500 m., *J. Hers*, no. 2201, October 9, 1922; Ta lung men, *J. Hers*, no. 2218, October 10, 1922.

SHENSI: Tai pei shan, *W. Purdom*, no. 981, 1910.

DISTRIBUTION: also Kiangsu (*Hers*, no. 2316); Korea (ex Koidzumi, l. c.).

This variety resembles in its pubescence *M. cathayana* Hemsl., but it has the aristate teeth of *M. mongolica*. From *M. mongolica* var. *vestita* Rehd. which is also pubescent, it differs in its much larger deeply lobed

leaves, from 10–17 cm. long, while those of var. *vestita* are undivided and only 4–7 cm. long.

Morus acidosa Griffith, Not. Pl. As. IV. 388 (1854).—Schneider in Sargent, Pl. Wilson. III. 296 (1916).—Koidzumi in Tokyo Bot. Mag. XXXI. 37 (1917); in Bull. Imp. Seric. Exp. Sta. Jap. IX 34, t. 4 (1917).—Hers in Jour. N. China Branch R. As. Soc. LIII. 112 (1922); Liste Ess. Lign. Honan, 19 (1922).

Morus bombycis Koidzumi l. c. 36 (1917); l. c. 32, t. 2 (1917).

CHILI: Peking, on city wall, *F. N. Meyer*, no. 1382, April 30, 1913 (staminate flowers).

HONAN: Sung hsien, San kuan miao, alt. 1200 m., *J. Hers*, no. 509, May 24, 1919 (pistillate flowers); Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, no. 1250, September 25, 1919 (sterile).

DISTRIBUTION: also Hupeh, Szechuan, Yunnan, Kweichou, Kwangtung; Formosa, Japan, Himalayas.

Broussonetia papyrifera L'Héritier in Ventenat, Tabl. Règn. Vég. III. 547 (1799).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 135 (Enum. Pl. Chin. Bor. 61) (1833).—Turczaninow in Bull. Soc. Nat. Moscou, X. no. VII. 157 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).—Debeaux in Act. Soc. Linn. Bordeaux, XXXIII. 63 (Fl. Tien-tsin, 40) (1879).—Hemsley in Jour. Linn. Soc. XXVI. 455 (1894).—Pritzel in Bot. Jahrb. XXIX. 298 (1900).—Schneider in Sargent, Pl. Wilson. III. 303 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 109 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 5 (1922).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 174 (Pl. Peitaiho) (1922).

CHILI: Peking, on city wall, *F. N. Meyer*, nos. 928, 1016, May 20 and July 12, 1913.—See also Bunge, l. c., Turczaninow, l. c., Debeaux, l. c., and Schneider, l. c.

SHANTUNG: near Chi ning chou, *F. N. Meyer*, no. 381, August, 1907 (*f. variegata* Ser.; Herb. U. S. Dept. Agric.); Cape Jaeschke, *O. Nebel* (ex Loesener, l. c.).

HONAN: Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1703, September 17, 1921.

SHANSI: Hia hsien, Huang lai kow, *J. Hers*, no. 1829, October 2, 1921.

SHENSI: In kia pu, *G. Giraldi* (no. 1637, ex Pritzel, l. c.).

DISTRIBUTION: also Kiangsu, Hupeh, Szechuan, Yunnan, Hunan, Chekiang, Kwantung, Hainan; Formosa, Korea, India, Malaysia, Polynesia.

Probably only planted and naturalized in Chili; also cultivated and naturalized in Japan.

Broussonetia Kaempferi Siebold in Verh. Bat. Genoot. XII. 28 (Syn. Pl. Oecon. Jap.) (1830).—Schneider in Sargent, Pl. Wilson. III. 304

(1916).—Bailey, Gent. Herb. I. 19 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 5 (1922).

HONAN: Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, no. 1208, September 21, 1919; Chi kung shan, *L. H. Bailey*, June 8, 1917.—See also Hers, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan, Hunan, Chekiang, Fokien, Kwangtang; Formosa, Korea, Japan.

Cudrania tricuspidata Bureau in Lavallée, Arb. Segrez. 243 (1877).—Schneider in Sargent, Pl. Wilson. III. 306 (1916).—Bailey, Gent. Herb. I. 19 (1920).—Hers in Jour. N. China Branch R. As. Soc. LIII. 109 (1922); Liste Ess. Lign. Honan, 10 (1922).

Cudranus trilobus Hance in Jour. Bot. VI. 49 (1868); XIV. 365 (1876).

Cudrania triloba Forbes in Jour. Bot. XXI. 145 (1883).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 253 (1884).—Faber in Denkschr. Entwickel. Kiautschou, 30 (1898).—Hemsley in Jour. Linn. Soc. XXVI. 470 (1899).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 33 (1905).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 109 (1919).

SHANTUNG: Ocean bluff near Chifu, *C. S. Sargent*, September 22, 1903; Chifu, *N. H. Cowdry*, nos. 620 and 621, June 23 and August 1, 1920.—See also Hance, l. c., Franchet, l. c., Hemsley, l. c., Schneider, l. c. and Loesener, l. c.

HONAN: Teng feng, Yu tai shan, alt. 800 m., *J. Hers*, no. 293, June 17, 1919; Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, no. 591, May 26, 1919.

SHENSI: Lung chow, Kuan shan, alt. 2000 m., *J. Hers*, no. 2335, July 3, 1922; King lung shan, alt. 900 m., *J. Hers*, no. 2441, October 9, 1922; Niu pei shan, alt. 700 m., *J. Hers*, no. 2453, October 11, 1922.—See also Diels, l. c.

DISTRIBUTION: also Kiangsu, Chekiang, Kiangsi, Hupeh, Hunan, Yunnan; Korea, Japan.

Ficus Baileyi Hutchinson in Bailey, Gent. Herb. I. 19 (1920).

HONAN: Chi kung shan, *L. H. Bailey*, June 13, 1917 (ex Bailey, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Kiangsi, Chekiang.

Ficus pumila Linnaeus, Spec. 1060 (1753).—Hemsley in Jour. Linn. Soc. XXVI. 465 (1899).—Schneider in Sargent, Pl. Wilson. III. 311 (1916).—Bailey, Gent. Herb. I. 20 (1920).

HONAN: Chi kung shan, *L. H. Bailey* (ex Bailey, l. c.).

DISTRIBUTION: also Kiangsu, Chekiang, Kiangsi, Hupeh, Kwangsi, Kwangtung, Fokien; Formosa, Japan.

Ficus heteromorpha Hemsley in Hooker, Icon. Pl. XXVI. tt. 2533, 2534 (1897).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 34 (1905).—Schneider in Sargent, Pl. Wilson. III. 311 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 110 (1922); Liste Ess. Lign. Honan, 13 (1922).

HONAN: Mien chih, alt. 800 m., *J. Hers*, nos. 61, 62, August 20, 1919; Lu shih, Lung shui, alt. 1100 m., *J. Hers*, no. 124, October 4, 1918; Lushih, Lao kun shan, alt. 2000 m., *J. Hers*, September 21, 1919; Teng feng hsien, alt. 600 m., *J. Hers*, no. 227, April 23, 1919; Sung hsien, San kuan miao, alt. 1400 m., *J. Hers*, no. 528, May 24, 1919; Sung hsien, Shi tze miao, *J. Hers*, nos. 576, 577 and 1247, May 26 and September 25, 1919.—See also Hers, l. c.

SHENSI: Tai pei shan, *W. Purdom*, no. 982, 1910.—See also Diels, l. c.

DISTRIBUTION: also Kiangsi, Hupeh, Szechuan, Hunan (*Handel-Mazzetti*, nos. 11782, 12225, 12228), Yunnan (*Siméon Ten*, no. 398), Fokien (*Warburg*, no. 5901; *Hongkong Herb.*, no. 3448); Liukiu Islands (*Yokohama Nursery Co.*).

This species with deciduous leaves is the only Ficus which has a wider distribution in northern China; the two preceding species which are evergreen just reach the southern border of Honan and the following species extends from Hupeh only to southern Shensi.

Ficus tikoua Bureau in Jour. de Bot. II. 213, t. 7 (1888).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 34 (1905).

SHENSI: *G. Giraldi*, no. 44 (ex Diels, l. c.).

DISTRIBUTION: also Hupeh, Hunan (*Handel-Mazzetti*, no. 12588), Yunnan.

URTICACEAE

Boehmeria platanifolia Franchet & Savatier, Enum. Pl. Jap. I. 440 (1875).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 110 (1919).

SHANTUNG: Lau shan (ex Loesener, l. c.).

DISTRIBUTION: also Kiangsi, Hupeh, Szechuan; Japan.

Boehmeria spicata Thunberg in Trans. Linn. Soc. II. 330 (1794).—Maximowicz in Bull. Sci. Acad. St. Pétersb. XXII. 2 (1876); in Mél. Biol. IX. 645 (1877).—Hemsley in Jour. Linn. Soc. XXVI. 488 (1899).

Boehmeria spec. Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 477 (Ind. Fl. Pekin.) (1859).

Boehmeria platyphylla var. *japonica* Weddell in De Candolle, Prodr. XVI. pt. I. 213 (1869).—Pritzel in Bot. Jahrb. XXIX. 304 (1900).— Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 110 (1919).

CHILI: Peking, *E. Bretschneider*, *Tatarinow* (ex Maximowicz, l. c. and ex Hemsley, l. c.).

SHANTUNG: Lau shan, Cape Yatau (ex Loesener, l. c.).

SHENSI: *G. Giraldi* (ex Pritzel, l. c.).

DISTRIBUTION: also Japan.

I have seen no specimens of Boehmeria from Chili or from Shensi, but assume that the specimens from these two provinces belong to the same species.

Boehmeria platyphylla D. Don, Prodr. Fl. Nepal. 60 (1825).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 29 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II, 110 (1919).—Bailey, Gent. Herb. I. 20 (1920).

SHANTUNG: Tsingtau, *R. Zimmermann*, no. 445, 1901.—See also Gilg, l. c. and Loesener, l. c.

HONAN: Chi kung shan, *L. H. Bailey*, 1917 (ex Bailey, l. c.); Kio shan, *L. H. Bailey*, 1917 (ex Bailey, l. c.).

DISTRIBUTION: also China, Himalayas, Formosa.

Boehmeria platyphylla var. **macrophylla** Weddell in De Candolle Prodr. XVI. pt. I. 213 (1869).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 110 (1919).

SHANTUNG: Cape Yatau (ex Loesener, l. c.).

DISTRIBUTION: also China, Japan.

Boehmeria nivea Gaudichaud in Freycinet, Voy. Bot. 499 (1826).—Wright in Jour. Linn. Soc. XXVI. 486 (1894).—Pritzel in Bot. Jahrb. XXIX. 304 (1900).

SHENSI: *P. J. Piasezki* (ex Wright, l. c., and Pritzel, l. c.).

DISTRIBUTION: also elsewhere in China; Japan, Malay Archipelago.

LORANTHACEAE

Loranthus europaeus Jacquin, Enum. Stirp. Vindob. 230, t. 3 (1762).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 71 (Pl. David. I. 261) (1884).

CHILI: Peking, *A. David*, no. 441 (ex Franchet, l. c.).

DISTRIBUTION: also Szechuan; Japan; eastern Europe, western Asia to Kurdistan.

I have seen no specimens of *L. europaeus* from eastern Asia, but Professor Lecomte informs me that in the herbarium of the Museum at Paris there is a specimen from Szechuan collected by Farges and several specimens from Japan. According to David it is found on Elm and also on Apricot.

Loranthus yadoriki Siebold apud Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 229 (1876); Mél. Biol. IX. 609 (1877).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 34 (1905).

Loranthus Jodoniki Siebold apud Siebold & Zuccarini in Abh. Akad. Muench. IV. 193 (Fam. Nat. Jap. I. 85) (1846), nomen.

SHENSI: "Ki fon shan" near "Pao ki scen," *G. Giraldi*, no. 5998 (ex Diels, l. c.).

DISTRIBUTION (including var. *hupehanus* Lecomte): also Hupeh, Szechuan, Chekiang (*H. H. Hu*, no. 465), Kwangtung (*R. Mell*, no. 866); Korea, Japan.

As I have not seen Giraldi's specimen, I cannot say if his no. 5998 represents the type or the var. *hupehanus* Lecomte (in Sargent, Pl. Wilson. III. 315 [1916]) which differs in the grayish color of the tomentum of the under side of the leaves.

Viscum album Linnaeus, Spec. 1023 (1753).—Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 2 (1876); in Mél. Biol. IX. 615 (1877).—Franchet in Mem. Soc. Sci. Nat. Cherbourg, XXIV. 251 (1884); in Nouv. Arch. Mus. Paris, sér. 2, VII. 71 (Pl. David. I. 261) (1884).—Faber in Denkschr. Entwickel. Kiautschou, 30 (1898).—Hemsley in Jour. Linn. Soc. XXVI. 407 (1899).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 29 (1904).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 34 (1905).—Lecomte in Sargent, Pl. Wilson. III. 318 (1916).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 111 (1919).—Hers in Jour. N. China Branch R. As. Soc. LIII. 117 (1922); Liste Ess. Lign. Honan, 33 (1922).

CHILI: Weichang, *W. Purdom*, no. 64, 1909.—See also Maximowicz, l. c. and Franchet, l. c. (Pl. David.).

SHANTUNG: See Faber, l. c., Hemsley, l. c., Franchet, l. c. (Mém. Cherbourg), Gilg, l. c. and Loesener, l. c.

HONAN: Shan chow, Chang tsun, alt. 800 m., *J. Hers*, no. 817, October 3, 1919.—See also Hers, l. c.

SHENSI: "Fu kio, Huo kia zaez", *G. Giraldi* (ex Diels, l. c.).

DISTRIBUTION: also Europe to India, Japan, Manchuria and Korea.

This species seems to grow chiefly on Poplars, Willows and Elms and according to Giraldi also, though rarely, on Quercus. Franchet states that the form with yellow fruit is found chiefly on Populus, that with red fruit on Ulmus. The latter form has been distinguished as var. *rubro-aurantiacum* Makino (in Tokyo Bot. Mag. XVIII. 67 [1904]).

Korthalsella fasciculata Lecomte in Bull. Hist. Nat. Mus. Paris, 1916, 266.

Viscum articulatum Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 72 (Pl. David. I. 262) (1884); non Burmann f.

Viscum japonicum Hemsley in Jour. Linn. Soc. XXVI. 407 (1894), quoad specimen e Shensi.—Pritzel in Bot. Jahrb. XXIX. 305 (1900).—Non Thunberg.

Bifaria Davidiana Van Tieghem in Bull. Soc. Bot. France, XLIII. 173 (1896).

Bifaria fasciculata Van Tieghem, l. c. 174 (1896).

SHENSI: Tsin ling shan, *A. David* (ex Franchet, l. c., Hemsley, l. c., Pritzel, l. c. and Lecomte, l. c.).

DISTRIBUTION: also Szechuan.

This species of which I have seen no specimen had been identified by Franchet with *Viscum articulatum* Burm. and by Hemsley and Pritzel with *Viscum japonicum* Thunb. now referred to *Korthalsella Opuntia* Merrill.[1]

[1] **Korthalsella Opuntia** (Thunb.) Merrill in Tokyo Bot. Mag. XXX. 68 (1916).

Viscum opuntia Thunberg, Fl. Jap. 64 (1784).

Viscum japonicum Thunberg in Trans. Linn. Soc. II. 329 (1794).—Hemsley in Jour. Linn. Soc. XXVI. 407 (1894).—Pritzel in Bot. Jahrb. XXIX. 305 (1900).

Korthalsella japonica Engler in Nat. Pflanzenfam. Nachtr. I. 138 (1897).

Pseudixus japonicus Hayata in Tokyo Bot. Mag. XXIX. (166) (1915); XXX. 69 (1916); Icon. Pl. Formos. V. 188, fig. 64 (1915).

Korthalsella moniliformis (Wight) Lecomte in Bull. Hist. Nat. Mus. Paris, 1916, 265.

SANTALACEAE

Buckleya lanceolata Miquel, Cat. Mus. Bot. Lugd.-Bat. Fl. Jap. 79 (1870).—Hemsley in Jour. Linn. Soc. XXVI. 409 (1894).—Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 5 (1922).

Buckleya Henryi Diels in Bot. Jahrb. XXIX, 306 (1900); XXXVI. beibl. LXXXII. 34 (1905).

HONAN: Sung hsien, Shih tze miao, *J. Hers*, no. 565, May 26, 1919; Lu shih, Hiung eul shan, alt. 1400 m., *J. Hers*, no. 931, October 10, 1919; Lu shih, Lao kiun shan, alt. 2000 m., *J. Hers*, no. 1192, September 21, 1919.

SHENSI: Lao y shan, *G. Giraldi*, 1897; Tai pei shan, *W. Purdom*, nos. 935 and 936, 1910

DISTRIBUTION: also Hupeh, Szechuan; Japan.

None of the specimens cited above have fruits and it is therefore impossible to say if they belong to the typical form or to the form described as *B. Henryi* by Diels.

Buckleya Graebneriana Diels in Bot. Jahrb. XXIX. 306 (1900).

SHENSI: In kia pu, *G. Giraldi*, no. 1061, and Si ku tziu shan, *G. Giraldi*, no. 1060 (ex Diels, l. c.).

ARISTOLOCHIACEAE

Aristolochia setchuenensis Franch. var. **holotricha** Diels in Bot. Jahrb. XXIX. 310 (1900).

SHENSI: Hua tzo pin, *G. Giraldi* (ex Diels, l. c.).

Aristolochia manshuriensis Komarov in Act. Hort. Petrop. XXII. 112 (Fl. Mansh.) (1904).—Nakai in Jour. Coll. Sci. Tokyo, XXXI. 176 (Fl. Kor. II.) (1911).—Mori, Enum. Pl. Corea, 128 (1922).

Aristolochia sp. Hers in Jour. N. China Branch R. As. Soc. LIII. 107 (1922); Liste Ess. Lign. Honan, 4 (1922).

HONAN: Hwei hsien, Pai yun sze, *J. Hers*, no. 791, June 15, 1919.—See also Hers, l. c.

DISTRIBUTION: also Manchuria, northern Korea.

The specimen is sterile, but it agrees perfectly in shape, size and pubescence of its leaves with specimens from Manchuria and northern Korea.

Aristolochia contorta Bge. which occurs in Chili and *A. debilis* Sieb. & Zucc. reported from Shantung are herbaceous species and therefore do not enter into this enumeration.

POLYGONACEAE

Polygonum multiflorum Thunberg, Fl. Jap. I. 169 (1784).—Schneider in Sargent, Pl. Wilson. III. 325 (1916).—Hers in Jour. N. China Branch R. As. Soc. LIII. 113 (1922); Liste Ess. Lign. Honan, 22 (1922).

HONAN: Shan chow, Shang mao, alt. 700 m., *J. Hers*, no. 813, October 2, 1919.

DISTRIBUTION: also Kiangsu, Hupeh, Szechuan, Fokien; Formosa, Manchuria, Korea, Japan.

Polygonum cuspidatum Sieb. & Zucc. (= *P. Sieboldii* De Vriese) enumerated by Hers (l. c.) is an herbaceous species.

CHENOPODIACEAE

Eurotia ceratoides C. A. Meyer apud Ledebour, Fl. Alt. IV. 239 (1833).—Moquin-Tandon in De Candolle, Prodr. XIII. pt. II. 120 (1849).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, VII. 57 (Pl. David. I. 249) (1884).—Hemsley in Jour. Linn. Soc. XXVI. 326 (1894).

CHILI: Peking, *A. David* (ex Franchet, l. c., and Hemsley, l. c.).

DISTRIBUTION: also western Europe and through central Asia to Manchuria.

TROCHODENDRACEAE

Euptelea Franchetii Van Tieghem in Jour. de Bot. XIV. 272 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. I. 314 (1913).—Hers in Jour. N. China Branch R. As. Soc. LIII. 110 (1922); Liste Ess. Lign. Honan, 13 (1922).

Euptelea pleiosperma Maximowicz in Act. Hort. Petrop. XI. 39 (1890); non Hooker f. & Thomson.

Euptelea polyandra Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 45 (1905); non Siebold & Zuccarini.

HONAN: Sung hsien, San kuan miao, *J. Hers*, no. 549, May 24, 1919; Sung hsien, Shih tze miao, alt. 1200 m., *J. Hers*, no. 1244, September 25, 1919; Lushih, Hiung eul shan, alt. 1400 m., *J. Hers*, nos. 925 and 930, October 10, 1919; Lushih, Lao kiun shan, alt. 2000 m., *J. Hers*, nos. 1148 and 1177, September 21, 1919; Lushih, Kiao ho, alt. 1000 m., *J. Hers*, no. 972, October 13, 1919; Yung ning, Tsi li ping, alt. 1000 m., *J. Hers*, no. 1340, September 30, 1919; Tsi yuan hsien, Tien tan shan, *J. Hers*, no. 1798, September 21, 1921.—See also Hers, l. c.

SHENSI: "Kin-tou-san," *G. Giraldi*, July, 1897; "Thui kio tsuen, Miao-wang-san, Houan-tou-san, Kan-y-san, Ngo-san, Lao-y-san and Lean-san," *Hugh Scallan*, 1899; Tai pei shan, *W. Purdom*, no. 1036, 1910.—See also Diels, l. c., and Rehder & Wilson, l. c.

KANSU: "ad fl. Dshombunon", *G. N. Potanin* (ex Maximowicz, l. c.).

DISTRIBUTION: also Hupeh, eastern Szechuan.

CERCIDIPHYLLACEAE

Cercidiphyllum japonicum Sieb. & Zucc. var. **sinense** Rehder & Wilson in Sargent, Pl. Wilson. I. 316 (1913).

SHENSI: southern slope of the Tai pei shan, alt. 2300 m., *W. Purdom*, no. 1107, 1910.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also Hupeh, Szechuan.

Southern Shensi marks the northern limit of the range of this tree.

RANUNCULACEAE

Paeonia suffruticosa Andrews, Bot. Rep. VI. t. 373 (1804).—Rehder & Wilson in Sargent, Pl. Wilson. I. 319 (1913).

Paeonia Moutan Sims in Bot. Mag. XXIX. t. 1154 (1809).—Prantl in Engler & Prantl, Nat. Pflanzenfam. III. 2, 55, (1888).—Bretschneider, Hist. Eur. Bot. Disc. China, 425 (1898).

Paeonia Moutan forma *humilis* Pritzel in Bot. Jahrb. XXIX. 324 (1900).

Paeonia suffruticosa var. *spontanea* Rehder in Jour. Arnold Arb. I. 193 (1920).

SHENSI: Ki san, *Hugh Scallan*, and Gniu ju and Lun shan, *G. Giraldi* (ex Pritzel, l. c.); 50 li west of Yenan fu, *W. Purdom*, no. 338, 1910; Tai pei shan, *W. Purdom*, no. 1128, 1910; Han ch'eng, Moutan shan, (ex Bretschneider, l. c.).—See also Rehder & Wilson, l. c. and Rehder, l. c.

KANSU: north of the Hoang ho (ex Prantl, l. c.); Hung si hsien, alt. about 1400 m., *J. Hers*, no. 2417, August 2, 1922.

The recent collection of this species by native collectors for Mr. Hers tends to confirm the statement made by Prantl (l. c.) that the Moutan occurs wild in Kansu, though no mention is made that the specimen came from wild plants. Whether the two names given to the wild plants from Shensi by Pritzel and by myself represent different forms I am unable to say, as I have not seen Scallan's and Giraldi's specimens and Pritzel gives no description except "25 cm. alt."; Purdom's specimens are certainly taller, but the living plants raised from his seeds do not seem to grow as high as the cultivated garden forms.

Clematis pogonandra Maximowicz in Act. Hort. Petrop. XI. 8 (1890).—Rehder & Wilson in Sargent, Pl. Wilson. I. 319 (1913).

SHENSI: Tai pei shan, *W. Purdom*, no. 1138, 1910.—See also Rehder & Wilson, l. c.

KANSU: Idshu-san, *G. N. Potanin* (ex Maximowicz, l. c.).

DISTRIBUTION: also Hupeh, Szechuan.

Clematis heracleifolia De Candolle, Syst. I. 138 (1818).—Hemsley in Jour. Linn. Soc. XXIII. 4 (1886).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 34 (1904).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 545 (1903); Contrib. Fl. As. Or. I. 31 (1905).—Rehder & Wilson in Sargent, Pl. Wilson. I. 320 (1913).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 122 (1919).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 159 (Pl. Peitaiho) (1922).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 373.

Clematis tubulosa Turczaninow in Bull. Soc. Nat. Moscou X. no. VII. 148 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859); in Bull. Acad. Sci. St. Pétersb. XXII. 214 (1876); Mél. Biol. IX. 589 (1876).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, v. 165 (Pl. David. I. 13) (1882).

Clematis heracleifolia var. *Davidiana* Hemsley in Jour. Linn. Soc. XXIII. 4 (1886).

CHILI: *G. L. Staunton* (ex De Candolle, l. c.); Wo fu ssu, *N. H. Cowdry*, no. 1009, September 27, 1920; Peitaiho, *N. H. Cowdry*, no. 362, September 1, 1919; Chang li, *F. N. Meyer*, no. 204, November, 1905 (Herb. U. S. Dept.

Agric.); Ying tou ko, *F. N. Meyer*, no. 1285, September 12, 1913; Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, no. 2181, October 8, 1922; Jehol, *W. Purdom*, no. 218, 1909 (seeds only; plants raised from this seed growing in the Arnold Arboretum).—See also Franchet, l. c., Hemsley, l. c., Finet & Gagnepain, l. c., Cowdry, l. c., and Limpricht, l. c.

SHANTUNG: Chifu mountains, *E. Faber*, no. 253 (Gray Herb.); Cape Yatau, *R. Zimmermann*, no. 452 (ex Gilg, l. c.); without precise locality, "Zim, 624, 1. 9. 02" ex Herb. Hongkong Bot. Gard., and *A. C. Maingay*, no. 106.—See also Hemsley, l. c. and Loesener, l. c.

DISTRIBUTION (of the type): also Korea.

Clematis heracleifolia var. **ichangensis**, Rehder & Wilson in Sargent, Pl. Wilson. I. 321 (1913).

Clematis heracleifolia Pritzel in Bot. Jahrb. XXIX. 332 (1900); non De Candolle.

SHENSI: Huan tuo san, *G. Giraldi*, September 10–20, 1897; Tai pei shan, *W. Purdom*, no. 1010, 1910.—See also Pritzel, l. c. and Rehder & Wilson, l. c.

DISTRIBUTION: also Hupeh.

Clematis Tatarinowii Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 215 (1876); in Mél. Biol. IX. 560 (1876).

CHILI: Peking, *A. Tatarinow* (ex Maximowicz, l. c.).

I have seen no specimen of this species and it is not mentioned by Hemsley nor by Finet & Gagnepain. It is apparently related to the preceding species.

Clematis fusca Turczaninow in Bull. Soc. Nat. Moscou, XIII. 60 (1840).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 546 (1903); Contrib. Fl. As. Or. I. 32 (1905).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 123 (1919).

SHANTUNG: Lau shan (ex Loesener, l. c.).

DISTRIBUTION: also Manchuria, Korea, Japan.

Clematis lasiandra Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 213 (1876); in Mél. Biol. IX. 586 (1876).—Rehder & Wilson in Sargent, Pl. Wilson. I. 322 (1913).

SHENSI: Tai pei shan, *W. Purdom*, no. 1139, 1910.—See also Rehder & Wilson.

DISTRIBUTION: also Hupeh, Szechuan, Hunan (*Handel-Mazzetti*, no. 12730); Japan.

Clematis florida Thunberg, Fl. Jap. 240 (1784).—Rehder & Wilson in Sargent, Pl. Wilson. I. 325 (1913).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 123 (1919).

SHANTUNG: Lau shan and Cape Yatau (ex Loesener, l. c.).

DISTRIBUTION: also Hupeh, Hunan (Handel-Mazzetti, nos. 11957, 11997); Indochina, Japan.

Clematis fruticosa Turczaninow in Bull. Soc. Nat. Moscou, v. 180 (1832).—Maximowicz, Enum. Pl. Mongol. 2 (1889); in Act. Hort. Petrop. XI. 5 (1890).—Pritzel in Bot. Jahrb. XXIX. 331 (1900).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 537 (1903); Contrib. Fl. As. Or. I. 22 (1905).—Rehder & Wilson in Sargent, Pl. Wilson. I. 326 (1913).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 374 (1922).

CHILI: near Shih wen, *F. N. Meyer*, no. 1078, August 3, 1913; near Hui yan ku, *F. N. Meyer*, no. 1271, September 2, 1913.—See also Turczaninow, l. c., and Limpricht, l. c.

SHANSI: Wu chai hsien, alt. 2000–3000 m., *Tchueng Kieh*, J. Hers, no. 2051, September 7, 1922.—See also Maximowicz, l. c. (1890) and Finet & Gagnepain, l. c.

SHENSI: Fu kio, *G. Giraldi* (ex Pritzel, l. c.).

KANSU: *N. M. Przewalski* and *G. N. Potanin*, (ex Maximowicz, l. c. [1889, 1890]).

DISTRIBUTION: also Szechuan; Mongolia.

The specimens seen belong to the var. *lobata* Maximowicz (Enum. Pl. Mongol. 3 [1889]).

Clematis fruticosa var. **tomentella** Maximowicz, Fl. Tangut. 2 (1889).

KANSU: Bayan gol, *G. N. Potanin* (ex Maximowicz, l. c.).

Clematis nannophylla Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 305 (1877); in Mél. Biol. IX. 707 (1887); Fl. Tangut. 2, t. 1, figs. 1–9 (1889).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 537 (1903); Contrib. Fl. As. Or. I. 22 (1905).

Clematis nannophylla var. *foliosa* Maximowicz in Act. Hort. Petrop. XI. 5 (1890).

KANSU: Lotani, south of Min chou, alt. 2500 m., *W. Purdom*, no. 1027, 1910; Yan pu ko, *F. N. Meyer*, no. 1786, October 7, 1914; Chieh chon, *F. N. Meyer*, no. 1794, October 10, 1914 (Herb. U. S. Dept. Agric.).—See also Maximowicz, l. c.

The specimens seen belong to var. *foliosa* Maxim., if this form is sufficiently distinct to be maintained.

Clematis obscura Maximowicz in Act. Hort. Petrop. XI. 6 (1890).—Rehder & Wilson in Sargent, Pl. Wilson. I. 329 (1913).

? *Clematis Benthamiana* Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 790 (Pl. Enum. 1) (1891); in Szechenyi, Wiss. Ergeb. Reise Ostas. II. 676 (1898); vix Hemsley.

SHENSI: northwest of Hang cheng hsien, *W. Purdom*, no. 382, 1910.

KANSU: Valley of Poiho, between Terga and Rasa, and near Nan ping, *G. N. Potanin* (ex Maximowicz, l. c.).—See also Kanitz, l. c.

DISTRIBUTION: also Hupeh, Szechuan.

To this species I have referred the plant collected by Loczy in Kansu and determined by Kanitz as *C. Benthamiana* Hemsl., as it appears very unlikely that the latter, which seems to be confined to eastern China, occurs in Kansu, while the closely related and similar *C. obscura* Maxim. is a Kansu plant based on material collected by Potanin.

Clematis chinensis Retzius, Observ. II. 18, no. 53, t. 2 (1781).—Pritzel in Bot. Jahrb. XXIX. 332 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. I. 329 (1913).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 123 (1919).

SHANTUNG: Cape Jaeschke (ex Loesener, l. c.).

SHENSI: Ki san, Pao ki, *Hugh Scallan* in Giraldi, no. 869 (ex Pritzel, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Hunan (*Handel-Mazzetti*, no. 11278), Fokien; Formosa.

Clematis chinensis var. **vestita** Rehder & Wilson in Sargent, Pl. Wilson. I. 330 (1913).—Bailey, Gent. Herb. I. 23 (1920).

HONAN: Chi kung shan, *L. H. Bailey* (ex Bailey, l. c.).

DISTRIBUTION: also Hupeh.

Clematis Benthamiana Hemsley in Jour. Linn. Soc. XXIII. 2 (1886).—Rehder & Wilson in Sargent, Pl. Wilson. I. 330 (1913).—Bailey, Gent. Herb. I. 23 (1920).

Clematis Pavoliniana Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 8 (1922); non Pampanini.

HONAN: near Liu hsien, *F. N. Meyer*, no. 1848, July 5, 1914; Ho dien, *F. N. Meyer*, no. 1863, July 7, 1914 (Herb. U. S. Dept. Agric.); Yung ning, Tsi li ping, *J. Hers*, no. 448, May 22, 1919; Sia shih, *J. Hers*, no. 349, May 25, 1921.—See also Bailey, l. c.

DISTRIBUTION: also Hupeh, Chekiang, Fokien, Chusan Archipelago; ? Formosa.

Clematis angustifolia Jacquin, Enum. Vindob. 310 (1762).—Bung in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 75 (Enum. Pl. Chin. Bor. 1e (1833).—Turczaninow in Bull. Soc. Nat. Moscou, X. no. VII. 148 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859); Enum. Pl. Mongol. 2 (1889).—Franchet in Mém. Soc. Sci. Nat. Cherbourg, XXIV. 197 (1884); in Nouv. Arch. Mus. Paris, sér. 2, v. 166 (Pl. David. I. 14) (1882).—Hemsley in Jour. Linn. Soc. XXIII. 2 (1886).—Faber in Denkschr. Entwickel. Kiautschou, 31 (1898).—Pritzel in Bot. Jahrb. XXXI. 332 (1900).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 536 (1903); Contrib. Fl. As. Or. I. 21 (1905).—Gilg in Bot. Jahrb. XXXIV. beibl. LXXV. 34 (1904).—Loesener in Beih. Bot. Centralbl. XXXVII. abt. II. 123 (1919).—Cowdry in Jour. N. China Branch R. As. Soc. LIII. 160 (Pl.

Peitaiho) (1922).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 374 (1922).

Clematis angustifolia var. *Tchefouensis* Debeaux in Act. Soc. Linn. Bordeaux, XXXI. 117 (Fl. Tché-foû, 22) (1877).

CHILI: Weichang, *W. Purdom*, no. 44, 1909; near San tun ying, *F. N. Meyer*, no. 986, June 2, 1913; Hsiao wu tai shan, *F. N. Meyer*, no. 1352, August 26, 1913; hills near Peking, *S. W. Williams*, August, 1876 (Gray Herb.); without precise locality, *Père Chanet*, no. 28, 1918.—See also Bunge, l. c., Turczaninow, l. c., Maximowicz, l. c., Franchet, l. c. (Pl. David.), Hemsley, l. c., and Limpricht, l. c.

SHANTUNG: Tsingtau, *R. Zimmermann*, no. 205, 1901; Cape Yatau, near Tei shing kung, *R. Zimmermann*, no. 448.—See also Hemsley, l. c., Debeaux, l. c., Franchet, l. c. (Mém. Cherbourg), Faber, l. c., Gilg, l. c., and Loesener, l. c.

SHENSI: Tai pa shan, *G. Giraldi*, no. 865 (ex Pritzel).

DISTRIBUTION: also Dahuria, Mongolia, Manchuria.

Clematis recta L. var. **mandshurica** Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 218 (1876); in Mél. Biol. IX. 595 (1876).—Hemsley in Jour. Linn. Soc. XXIII. 7 (1886).—Pritzel in Bot. Jahrb. XXIX. 332 (1900).

Clematis mandshurica Ruprecht in Bull. Acad. Sci. St. Pétersb. XV. 258 (1857).—Bailey, Gent. Herb. I. 23 (1920).

CHILI: Trappist Monastery, western hills near Peking, *N. H. Cowdry*, no. 1991, 1921.

HONAN: Chi kung shan, *L. H. Bailey*, 1917 (ex Bailey, l. c.).

SHENSI: Lun san huo, *G. Giraldi*, no. 895 (ex Pritzel, l. c.).

DISTRIBUTION: also Kiangsu, Chekiang; Manchuria, Korea.

Clematis paniculata Thunberg in Trans. Linn. Soc. II. 337 (1794).—Faber in Denkschr. Entwickel. Kiautschou, 31 (1898).—Pritzel in Bot. Jahrb. XXIX. 332 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. I. 330 (1913).

SHANTUNG: see Faber, l. c.

SHENSI: Gniu ju, In kia pu, Tui kio shan and Hua tzo pin, *G. Giraldi*, nos. 876, 882, 883, 884, 885 and 893 (ex Pritzel, l. c.).

DISTRIBUTION: also Kiangsu, Hupeh, Kiangsi, Chekiang; Manchuria, Korea, Japan.

The occurrence of this species in Shantung remains doubtful as Faber cites it with a question mark and no specimens of his are available and it has not been found by any other collector.

Clematis gracilifolia Rehder & Wilson in Sargent, Pl. Wilson. I. 331 (1913).

KANSU: Min chou, alt. 2600 m., *W. Purdom*, no. 1025, 1911; Choni district, alt. 2600–3000 m., *W. Purdom*, no. 1140, 1911.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also Western Szechuan.

Clematis montana Buchanan-Hamilton apud De Candolle, Syst. I. 164 (1818).—Pritzel in Bot. Jahrb. XXIX. 333 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. I. 332 (1913).

SHENSI: summit of Si ku tzin shan, *G. Giraldi*, no. 868 (ex Pritzel, l. c.).

DISTRIBUTION: also Hupeh, Szechuan, Yunnan; Himalayas.

Clematis montana var. **pentaphylla** Maximowicz in Act. Hort. Petrop. XI. 10 (1890).

KANSU: Monastery Dshoni, between Mörping and Wuping, and in the valley of the Tao ho near Dsio tsheng, *G. N. Potanin*, 1885 (ex Maximowicz, l. c.).

Among the numerous specimens of *C. montana* in this herbarium I have found only one which agrees in its leaves with var. *pentaphylla* and this is Forrest's no. 10222 from Yunnan which according to its large rosy pink flowers is referable to var. *rubens* Wils.

Clematis acerifolia Maximowicz in Bull. Soc. Nat. Moscou, LIV. 2 (Fl. As. Or. Fragm.) (1879).—Pritzel in Bot. Jahrb. XXIX. 333 (1900).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 524 (1903); Contrib. Fl. As. Or. I. 9 (1905).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 376 (1922).

CHILI: Po hua shan, *E. Bretschneider* (ex Maximowicz, l. c.), near Peking, *A. Provost*, no. 87, and *E. Bodinier*, 1889 (ex Finet & Gagnepain, l. c.), *W. Limpricht* (ex Limpricht, l. c.).

SHENSI: "In gia pon," *G. Giraldi*, no. 866 (ex Pritzel, l. c.).

Clematis Potanini Maximowicz in Act. Hort. Petrop. XI. 9 (1890).—Pritzel in Bot. Jahrb. XXIX. 333 (1900).

Clematis montana var. *Potaninii* Finet & Gagnepain in Bull. Soc. Bot. France, L. 525 (1903); Contrib. Fl. As. Or. I. 10 (1905).

SHENSI: In kia po, Tai pa shang and Tue lian pin, *G. Giraldi*, nos. 1668, 867 and 872 (ex Pritzel, l. c.).

KANSU: between Mörping and Wuping, on Itohu-shan, *G. N. Potanin*, 1885 (ex Maximowicz, l. c.).

DISTRIBUTION: also Szechuan.

Finet and Gagnepain consider this species of which I have seen no specimens a variety of *C. montana*, but the description by Maximowicz of the peduncles as bracteated in the middle and 1–3-flowered and of the flower as having 6 sepals does not agree with *C. montana;* possibly Maximowicz's species belongs to *C. Fargesii* Franchet, while the specimens from Batang cited by Finet & Gagnepain may represent *C. montana* var. *pentaphylla* Maxim.

Clematis Fargesii Franchet in Jour. de Bot. VIII. 273 (1894).—Rehder & Wilson in Sargent, Pl. Wilson. I. 335 (1913).

KANSU: Tow River, alt. 3000 m., *W. Purdom*, no. 1024, 1911 (see also Rehder & Wilson, l. c.).

DISTRIBUTION: also Szechuan.

Clematis Fargesii var. Souliei Finet & Gagnepain in Bull. Soc. Bot. France, L. 523 (1903); Contrib. Fl. As. Or. I. 8 (1905).—Rehder & Wilson in Sargent, Pl. Wilson. I. 336 (1913).

Clematis Fargesii Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 376 (1922); vix Franchet sensu stricto.

SHENSI: Tai pei shan, *W. Purdom*, no. 540, 1910.—See also Rehder & Wilson, l. c., and Limpricht, l. c.

DISTRIBUTION: also Szechuan, Yunnan (*G. Forrest*, no. 10354).

Clematis grata Wall. var. **grandidentata** Rehder & Wilson in Sargent, Pl. Wilson. I. 338 (1913).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 8 (1922).

Clematis grata Hemsley in Jour. Linn. Soc. XXIII. 3 (1886), pro parte.—Maximowicz in Act. Hort. Petrop. XI. 9 (1890).—Pritzel in Bot. Jahrb. XXIX. 333 (1900).—Non Wallich.

HONAN: Teng feng, Yu tai shan, *J. Hers*, no. 296, June 17, 1919.—See also Hers, l. c.

SHENSI: Tai pei shan, *W. Purdom*, no. 1, 1910.—See also Hemsley, l. c., Maximowicz, l. c., Pritzel, l. c., and Rehder & Wilson, l. c.

DISTRIBUTION: also Kiangsi (*H. H. Hu*, no. 1378), Hupeh, Szechuan, Kweichou (*Handel-Mazzetti*, no. 10308), Yunnan (*Siméon Ten*, no. 432).

Clematis pinnata Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 216 (1876); in Mél. Biol. IX. 591 (1876).

Clematis spec. Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859).

CHILI: west of Peking, near the temple Shan-ar across the river Chun che, *A. Tatarinow* (ex Maximowicz, l. c.).

According to Maximowicz's description this plant which has not been recorded by any later author may possibly be referable to *C. grata* var. *lobulata* Rehd. & Wils. Here belongs possibly *C. grata* Limpricht (Bot. Reis. Hochgeb. Chin. Ost-Tib. 376 [1922]) collected on the Hsiao wu tai shan.

Clematis Gouriana Roxburgh apud De Candolle, Syst. I. 138 (1818).—Pritzel in Bot. Jahrb. XXIX. 332 (1900).—Rehder & Wilson in Sargent, Pl. Wilson. I. 339 (1913).—Hers in Jour. N. China Branch R. As. Soc. LIII. 108 (1922); Liste Ess. Lign. Honan, 8 (1922).

HONAN: Hwei hsien, *J. Hers*, no. 715, June 19, 1919; Yung ning, She pa pan, alt. 800 m., *J. Hers*, nos. 848, 849, October 7, 1919; Yung ning, Tsi li ping, alt. 1000 m., *J. Hers*, no. 1351, September 30, 1919; Shih tze miao, alt. 1200 m., *J. Hers*, no. 1295, September 25, 1919.—See also Hers, l. c.

SHENSI: Tai pei shan, *W. Purdom*, no. 4, 1910.—See also Pritzel, l. c., and Rehder & Wilson, l. c.

DISTRIBUTION: also Hupeh, Szechuan, Yunnan, Hunan (*Handel-Mazzetti*, no. 12563), Fokien (*J. B. Norton*, no. 1390); Himalayas, Philippine Islands.

Clematis brevicaudata De Candolle, Syst. I. 138 (1818).—Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 75 (Enum. Pl. Chin. Bor. 1) (1833).—Turczaninow in Bull. Soc. Nat. Moscou, X. no. VII. 148 (1837).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb IX. 468 (Ind. Fl. Pekin.) (1859).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, v. 166 (Pl. David. I. 14) (1882).—Hemsley in Jour. Linn. Soc. XXIII. 3 (1886).—Maximowicz Fl. Tangut. 4 (1889); Enum. Pl. Mongol. 5 (1889) in Act. Hort. Petrop. XI. 8 (1890).—Pritzel in Bot. Jahrb. XXIX. 332 (1900).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 533 (1903); Contrib. Fl. As. Or. I. 18 (1905).—Rehder & Wilson in Sargent, Pl. Wilson. I. 340 (1913).

CHILI: Hsiao wu tai shan, *F. N. Meyer*, no. 1317, August 23, 1913; Shi wen, *F. N. Meyer*, no. 1077, August 3, 1913 (Herb. U. S. Dept. Agric.); Hsiao wu tai shan, Shui shih tao, alt. 1500 m., *J. Hers*, no. 2173, October 8, 1922; Hsiao wu tai shan, southeastern valley, alt. 900–1500 m., *J. Hers*, no. 2207, October 9, 1922; Hills near Great Wall, Kalgan road, *J. G. Jack*, October 5, 1905; Peking, western hills, *J. Hers*, nos. 1580 and 2247, August 7, 1921 and October 14, 1922; Nankow pass, *J. Hers*, no. 1598, August 15, 1921; Peking, *S. W. Williams*, August, 1876, Herb. Hance, no. 12703, and August, 1866 (Gray Herb.); without precise locality, *Père Chanet*, nos. 24 and 98, 1918 and 1919.—See also De Candolle, l. c., Bunge, l. c., Turczaninow, l. c., Maximowicz, l. c. (1859; 1889), Franchet, l. c., and Finet & Gagnepain, l. c.

SHENSI: *P. J. Piasezki* (ex Maximowicz, l. c. [1890] and Hemsley, l. c.); *G. Giraldi* (ex Pritzel, l. c.).

KANSU: *G. N. Potanin* (ex Maximowicz, l. c. [1889; 1890]).

DISTRIBUTION: also Kiangsi, Hupeh, Szechuan, Hunan, (*Handel-Mazzetti*, no. 12508, var. *lissocarpa* Rehd. & Wils.); Manchuria, Korea.

Clematis brevicaudata var. **tenuisepala** Maximowicz in Act. Hort. Petrop. XI. 9 (1890).

KANSU: southern slope of Fyn shan ling, *G. N. Potanin*, 1885 (ex Maximowicz, l. c.).

DISTRIBUTION: also Szechuan.

Clematis aethusifolia Turczaninow in Bull. Soc. Nat. Moscou, v. 181 (1832).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859); in Bull. Acad. Sci. St. Pétersb. XXII. 212 (1876); in Mél. Biol. IX. 586 (1876); Fl. Tangut. 3 (1889); Enum. Pl. Mongol. 5 (1889).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, v. 164 (Pl. David. I. 12) (1882).—Hemsley in Jour. Linn. Soc. XXIII. 1 (1886).—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 790 (Pl. Enum. 1) (1891);

in Szechenyi, Wiss. Ergeb. Reise Ostas. II. 676 (1898).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 540 (1903); Contrib. Fl. As. Or. I. 25 (1905).

CHILI: Hwai lai, *F. N. Meyer*, no. 1046 (96, 97), July 30, 1913; Nankow, *J. G. Jack*, October 6, 1905; Kalgan, *N. H. Cowdry*, no. 1802, 1921; Shih wen, *F. N. Meyer*, no. 1076, August 3, 1913 (Herb. U. S. Dept. Agric.); Peking, Temple of Heaven grounds, *F. N. Meyer*, no. 189, September, 1905 (Herb. U. S. Dept. Agric.).—See also Turczaninow, l. c., Maximowicz, l. c., Franchet, l. c., and Hemsley, l. c.

SHANSI: Wu chai hsien, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2053, September 7, 1922.

KANSU: Tao chow district, alt. 3300 m., *W. Purdom*, no. 1026, 1911.—See also Maximowicz, l. c. (1889), and Kanitz, l. c.

DISTRIBUTION: also Mongolia, Manchuria (var. *latisecta* Maxim.).

Clematis glauca Willd. var. **angustifolia** Ledebour, Fl. Ross. I. 3 (1842).

Clematis glauca Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859); non Willdenow.

Clematis intricata Bunge in Mém. Div. Sav. Acad. Sci. St. Pétersb. II. 75 (Enum. Pl. Chin. Bor. 1) (1833).—Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859).

Clematis orientalis var. *intricata* Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 211 (1876); in Mél. Biol. IX. 583 (1876); Fl. Tangut. 3 (1889); Enum. Pl. Mongol. 4 (1889); in Act. Hort. Petrop. XI. 5 (1890).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, v. 164 (Pl. David. I. 12) (1882).—Hemsley in Jour. Linn. Soc. XXIII. 6 (1886).—Kanitz in Szechenyi, Keletazs. Utján. Tudom. Ered. II. 791 (Pl. Enum. 1) (1891); in Szechenyi, Wiss. Ergeb. Reise Ostas. II. 677 (1898).—Pritzel in Bot. Jahrb. XXIX. 331 (1900).

Clematis orientalis var. *glauca* Maximowicz, Fl. Tangut. 3 (1889).

Clematis orientalis Finet & Gagnepain in Bull. Soc. Bot. France, L. 540 (1903); Contrib. Fl. As. Or. I. 25 (1905), pro parte.—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 376 (1922).—Non Linnaeus.

CHILI: Hwai lai, *F. N. Meyer*, no. 1047, July 30, 1913; Pau au tchon, *F. N. Meyer*, no. 1272, September 3, 1913 (Herb. U. S. Dept. Agric.); Kalgan, *N. H. Cowdry*, no. 1569, 1921; near Nankow, *J. G. Jack*, October, 4 1905; near Peking, *S. W. Williams*, August, 1876 (Gray Herb.); east of Peking, canal embankment, *N. H. Cowdry*, no. 359, October 3, 1919; Altar of Agriculture grounds, *N. H. Cowdry*, no. 360, May 4, 1919.—See also Bunge, l. c., Maximowicz, l. c. (1876, 1890) and l. c. 4 (1889), Franchet, l. c., Limpricht, l. c.

SHANSI: *G. N. Potanin*, 1884 (ex Maximowicz, l. c. [1890]).

SHENSI: *G. Giraldi*, nos. 865, 871, 873, 879, 880 (ex Pritzel, l. c.).—See also Limpricht, l. c.

KANSU: *P. J. Piasezki*, *N. M. Przewalski* and *G. N. Potanin* (ex Maximowicz, l. c. 3 [1889]) and *W. Mesny* (ex Hemsley, l. c.), *P. J. Piasezki* (ex Finet & Gagnepain, l. c.), *L. Loczy* (ex Kanitz, l. c.).

DISTRIBUTION: also Mongolia.

The specimens from Kansu cited by Hemsley and by Finet and Gagnepain may possibly belong to the following variety; Maximowicz does not mention Piasezki's specimens under either of the two varieties.

Clematis glauca var. **akebioides** Rehder & Wilson in Sargent, Pl. Wilson. I. 342 (1913).

Clematis orientalis var. *akebioides* Maximowicz in Act. Hort. Petrop. XI. 6 (1890).

KANSU: Lao chon district, alt. 3000 m., *W. Purdom*, no. 1129, 1911; Tow River, alt. 3000 m., *W. Purdom*, no. 1022, 1911.—See also Maximowicz, l. c., and Rehder & Wilson, l. c.

DISTRIBUTION: also Szechuan.

Some of the specimens, also those cited above, are more or less intermediate between this and the preceding variety, but the extreme forms of both varieties look very distinct. Purdom's two specimens are referable on account of the violet color of their flowers to *C. glauca* var. *akebioides* f. *phaeantha* Rehder (in Jour. Arnold Arb. I. 195 [1920]), based on cultivated specimens raised from seed probably collected in Kansu by Purdom; this form, too, is intermediate between the two varieties.

Clematis Kirilowii Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 210 (1876); in Mél. Biol. IX. 583 (1876).

Clematis Massoniana ? Maximowicz in Mém. Div. Sav. Acad. Sci. St. Pétersb. IX. 468 (Ind. Fl. Pekin.) (1859).

CHILI: near Peking, *Kirilow* (ex Maximowicz, l. c.).

Finet & Gagnepain do not mention this species and I have seen no specimens referable to this species which may be only an abnormal form of *C. glauca*.

Clematis tangutica Korshinsky in Bull. Acad. Sci. St. Pétersb. sér. 5, IX. 399 (1898), excl. descript.—Rehder & Wilson in Sargent, Pl. Wilson. I. 343 (1913).

Clematis orientalis var. *tangutica* Maximowicz, Fl. Tangut, 3 (1889).

KANSU: *P. J. Piasezki* (ex Maximowicz, l. c.).

Piasezki's specimen may belong to the following variety, as it is doubtful, if typical *C. tangutica* occurs in Kansu.

Clematis tangutica André var. **obtusiuscula** Rehder & Wilson in Sargent, Pl. Wilson. I. 343 (1913).

KANSU: Choni and Lao chon, alt. 3000 m., *W. Purdom*, no. 1023, 1911.—See also Rehder & Wilson, l. c.

DISTRIBUTION: also Szechuan.

Clematis alpina Miller, Dict. Gard. ed. 8, no. 9 (1768).—Franchet in Nouv. Arch. Mus. Paris, sér. 2, v. 166 (Pl. David. I. 14) (1882).—Hemsley in Jour. Linn. Soc. XXIII. 1 (1886).—Pritzel in Bot. Jahrb. XXIX. 333 (1900).—Finet & Gagnepain in Bull. Soc. Bot. France, L. 551 (1903); Contrib. Fl. As. Or. I. 36 (1905).—Limpricht, Bot. Reis. Hochgeb. Chin. Ost-Tib. 373 (1922).

Clematis alpina var. *chinensis* Maximowicz in Act. Hort. Petrop. XI. 10 (1890).

CHILI: Hsiao wu tai shan, alt. 2000–2600 m., *F. N. Meyer*, no. 1316, August 23, 1913; without precise locality, *Père Chanet*, nos. 41, 46, and 95, 1918 and 1919.—See also Franchet, l. c., Hemsley, l. c., Pritzel, l. c., Finet & Gagnepain, l. c., and Limpricht, l. c.

SHANSI: Wu chai hsien, Ta nan kow, alt. 2000–3000 m., *Tchuang Kieh*, Hers no. 2027, September 7, 1922.—See also Maximowicz, l. c., and Pritzel, l. c.

DISTRIBUTION: also Europe through northern Asia to Manchuria and Japan.

As most of the specimens before me are in fruit I am not able to distinguish between the type and var. *chinensis* Maxim.

Clematis macropetala Ledebour, Icon. Pl. Fl. Ross. 5, tab. 11 (1829).—Hance in Jour. Bot. XIII. 130 (1875).—Hemsley in Jour. Linn. Soc. XXIII. 5 (1886).—Diels in Bot. Jahrb. XXXVI. beibl. LXXXII. 40 (1905).

Atragene macropetala Ledebour, Fl. Alt. II. 367 (1830).—Maximowicz in Bull. Acad. Sci. St. Pétersb. XXII. 224 (1876); in Mél. Biol. IX. 603 (1876).

Clematis alpina var. *macropetala* Maximowicz, Enum. Pl. Mongol. 6 (1889); in Act. Hort. Petrop. XI. 10 (1890).—Finet & Gagnepain in Jour. Soc. Bot. France, L. 552 (1903); Contrib. Fl. As. Or. I. 37 (1905).

CHILI: without precise locality, *Père Chanet*, no. 6, 1918.—See also Hance, l. c., Maximowicz, l. c. (1876; 1889), Hemsley, l. c., and Finet & Gagnepain.

SHANSI: Wu tai shan, *G. N. Potanin* (ex Maximowicz, l. c. [1890]).

SHENSI: Tai pei shan, *G. Giraldi*, July, 1897; same locality alt. 2600–3000 m., *W. Purdom*, no. 417, 1910.—See also Diels, l. c.

KANSU: Min chou, alt. 2600–3000 m., *W. Purdom*, no. 417[a], 1911.—See also Maximowicz, l. c. (1889).

DISTRIBUTION: also Dahuria, Mongolia, Manchuria.

Maximowicz (l. c. [1889]) distinguishes of *C. alpina* var. *macropetala* two subvarieties: subvar. *rupetris* collected in Chili, and subvar. *albiflora* collected in Kansu.

(*To be continued*)